MYP by Concept

4&5

Music

Samuel Wright

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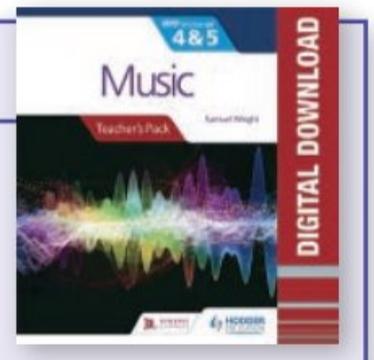
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MYP *by Concept*

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Music

Samuel Wright

Series editor: Paul Morris

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How to use this book

Each chapter is framed with a *Key concept*, *Related concept* and set in a *Global context*.



Figure 1.1 Different ways of notating sound

Welcome to Hodder Education's *MYP by Concept* Series! Each chapter is designed to lead you through an *inquiry* into the concepts of Music, and how they interact in real-life global contexts.

The *Statement of Inquiry* provides the framework for this inquiry, and the Inquiry questions then lead us through the exploration as they are developed through each chapter.

KEY WORDS

Key words are included to give you access to vocabulary for the topic. **Glossary terms** are highlighted and, where applicable, **visible thinking routines** are given to encourage their use.

! Take Action

! Whereas this book provides for multiple modes of engagement and exploration, you need to take an active role in the process of sharing and connecting to the world around you. Practise your research, develop good questioning skills, and apply them to the musical world we now find ourselves immersed in.

■ ATL

Activities are designed to develop your Approaches to Learning (ATL) skills.

◆ Assessment opportunities in this chapter:

Some activities are *formative* as they allow you to practise certain parts of the MYP Music Assessment Objectives. Other activities can be used by you or your teachers to assess your achievement *summatively* against all parts of an assessment objective.

Hint

In some of the activities, we provide hints to help you work on the assignment.

Listening strategically: Get an IDEA

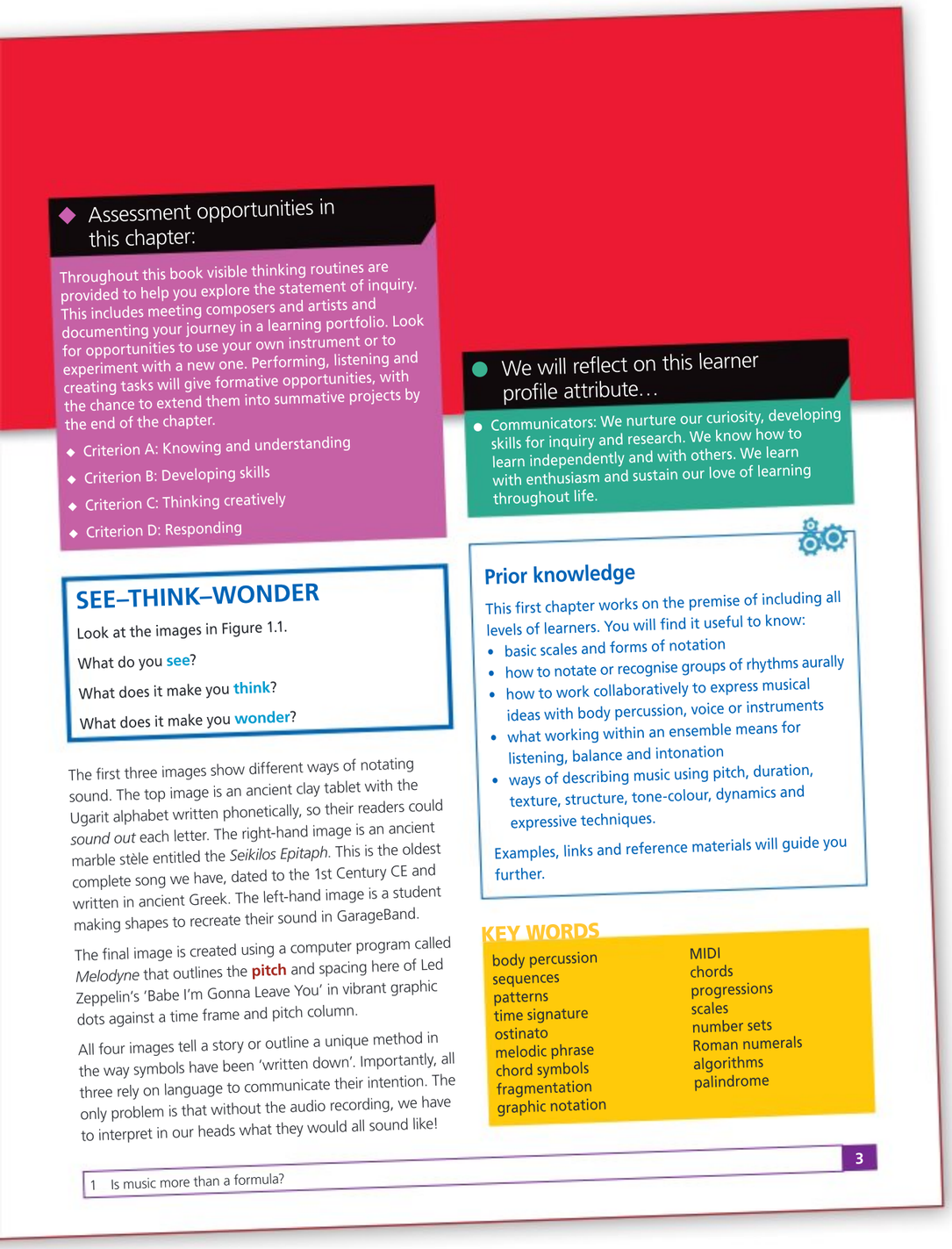
When you listen to music, try to think of the acronym **IDEA (identify, describe, explain** and **analyse)** to help you respond with knowledge, and correct terminology. These boxes will prompt you to do just that.

EXTENSION

Extension activities allow you to explore a topic further.

You are prompted to consider your conceptual understanding in a variety of activities throughout each chapter.

We have incorporated Visible Thinking – ideas, framework, protocol and thinking routines – from Project Zero at the Harvard Graduate School of Education into many of our activities.



◆ Assessment opportunities in this chapter:

Throughout this book visible thinking routines are provided to help you explore the statement of inquiry. This includes meeting composers and artists and documenting your journey in a learning portfolio. Look for opportunities to use your own instrument or to experiment with a new one. Performing, listening and creating tasks will give formative opportunities, with the chance to extend them into summative projects by the end of the chapter.

- Criterion A: Knowing and understanding
- Criterion B: Developing skills
- Criterion C: Thinking creatively
- Criterion D: Responding

● We will reflect on this learner profile attribute…

- Communicators: We nurture our curiosity, developing skills for inquiry and research. We know how to learn independently and with others. We learn with enthusiasm and sustain our love of learning throughout life.

SEE–THINK–WONDER

Look at the images in Figure 1.1.

What do you **see**?

What does it make you **think**?

What does it make you **wonder**?

Prior knowledge

This first chapter works on the premise of including all levels of learners. You will find it useful to know:

- basic scales and forms of notation
- how to notate or recognise groups of rhythms aurally
- how to work collaboratively to express musical ideas with body percussion, voice or instruments
- what working within an ensemble means for listening, balance and intonation
- ways of describing music using pitch, duration, texture, structure, tone-colour, dynamics and expressive techniques.

Examples, links and reference materials will guide you further.

The first three images show different ways of notating sound. The top image is an ancient clay tablet with the Ugarit alphabet written phonetically, so their readers could *sound out* each letter. The right-hand image is an ancient marble stèle entitled the *Seikilos Epitaph*. This is the oldest complete song we have, dated to the 1st Century CE and written in ancient Greek. The left-hand image is a student making shapes to recreate their sound in GarageBand.

The final image is created using a computer program called *Melodyne* that outlines the **pitch** and spacing here of Led Zeppelin's 'Babe I'm Gonna Leave You' in vibrant graphic dots against a time frame and pitch column.

All four images tell a story or outline a unique method in the way symbols have been 'written down'. Importantly, all three rely on language to communicate their intention. The only problem is that without the audio recording, we have to interpret in our heads what they would all sound like!

KEY WORDS

body percussion, sequences, patterns, time signature, ostinato, melodic phrase, chord symbols, fragmentation, graphic notation, MIDI, chords, progressions, scales, number sets, Roman numerals, algorithms, palindrome

A playlist has been compiled of all the pieces of music referenced throughout the book. Whenever the playlist is mentioned, you can access it here:

- **https://bit.ly/HodderMYPMusiciTunes**
- **https://bit.ly/HodderMYPMusicSpotify**
- **https://bit.ly/HodderMYPMusicYouTube**

▼ Links to:

Like any other subject, Music is just one part of our bigger picture of the world. Links to other subjects are discussed.

● We will reflect on this learner profile attribute…

- Each chapter has an IB learner profile attribute as its theme, and you are encouraged to reflect on these too.

Portfolio presentation

You are expected to document your learning in a Portfolio. Activities designed especially for your portfolio are provided throughout.

MEET THE COMPOSER / MUSICIAN / ARTIST

These boxes will introduce you to significant people in the field of music, providing background and short biographies.

Music exploration

Terminology useful to your studies is explained.

Missions and Cases

Some chapters focus on computer games, court cases or research missions for you to complete. The focus is on improving research and documenting your responses.

Finally, at the end of the chapter you are asked to reflect back on what you have learnt with our Reflection table, maybe to think of new questions brought to light by your learning.

Use this table to reflect on your own learning in this chapter.

Questions we asked	Answers we found	Any further questions now?
Factual		
Conceptual		
Debatable		

Approaches to learning you used in this chapter	Description – what new skills did you learn?	How well did you master the skills?			
		Novice	Learner	Practitioner	Expert

Learner profile attribute	Reflect on the importance of the attribute for your learning in this chapter.

1 Is music more than a formula?

Structuring sound means we can **communicate** ideas and **innovate**.



■ **Figure 1.1** Different ways of notating sound

CONSIDER THESE QUESTIONS:

Factual: What are some of the ways sound is used to communicate? What is the difference between traditional and graphic notation? What is the Golden Ratio? What is a sequence?

Conceptual: How does music represent a form of communication? What are some of the ways mathematics has influenced music? How are musical sounds connected to symbols? How does a repetitive structure relate to music, mathematics and coding? How can we use patterns and sequences to create music?

Debatable: Do music and mathematics share the same rules as code? Is music a language? To what extent does music use space / emptiness to communicate?

Now **share and compare** your thoughts and ideas with your partner, or with the whole class.

IN THIS CHAPTER, WE WILL…

- **Find out** how to recognise and then recreate patterns of music modelled on ancient and modern examples.
- **Explore** the interconnectedness of cultures with the natural world and how music forms a basis for innovation and creative thinking.
- **Take action** to research and then develop an understanding of the world we live in through connecting symbolic language with sound.

These Approaches to Learning (ATL) skills will be useful…

- Communication skills
- Information literacy skills
- Creative thinking skills
- Media literacy skills
- Transfer skills

Assessment opportunities in this chapter:

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Examples, links and reference materials will guide you further.

KEY WORDS

body percussion
sequences
patterns
time signature
ostinato
melodic phrase
chord symbols
fragmentation
graphic notation
MIDI
chords
progressions
scales
number sets
Roman numerals
algorithms
palindrome

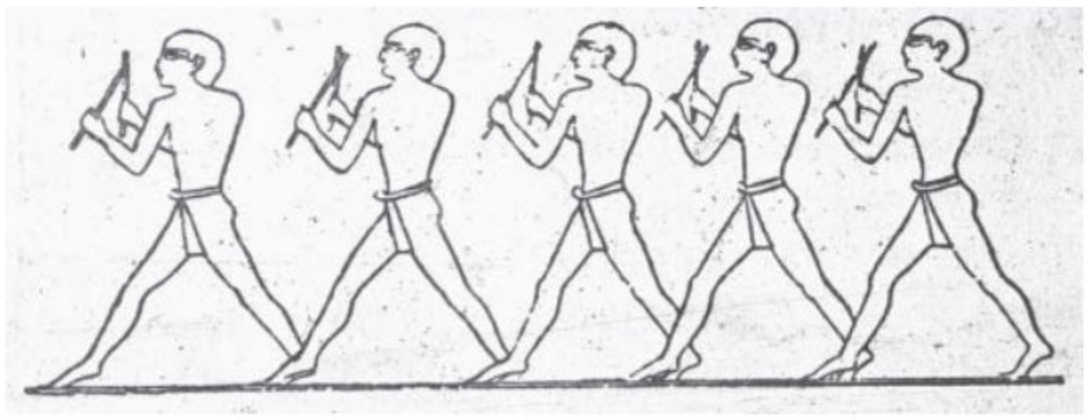
What are some of the ways sound is used to communicate?

HOW HAS MUSIC BEEN COMMUNICATED THROUGHOUT HISTORY?
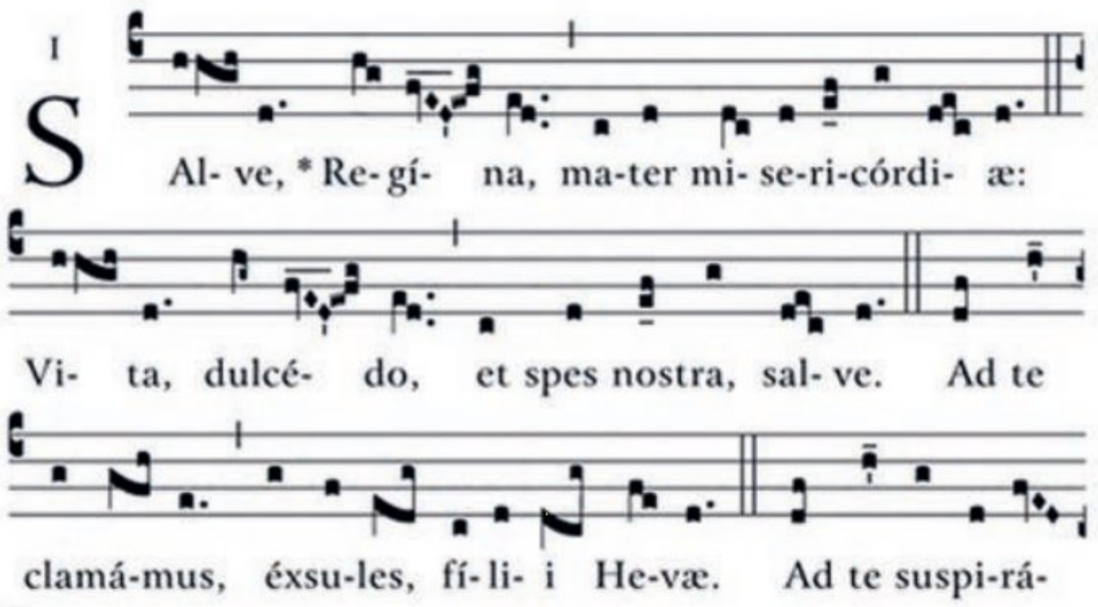
Notation, or writing down ideas for the purpose of communicating, is not a new concept, but the methods of notation demonstrate something of humankind's musical innovations through time. We have used everything from words, symbols and numbers, to shapes, colours and little dots to show. Why? It could be to record ideas, pass on stories or inform other musicians what to play and how they should play it.

One of the oldest musical instruments known to us is from Ancient Egypt, the o*ne-handed clapper*. Figure 1.2a shows that the playing of these instruments by female dancers was to keep those who were treading grapes in time with each other. Then if we jump forward to the 9th Century CE, we have modern *plainchant* (sung **chants**) written in the form of small dots and dashes called *neumes.* These graphical symbols are placed on four lines, and each neume carries one syllable of text tone sung (See Figure 1.2b.). In both cases, the symbols are instructions to show and demonstrate the nature of the music being recorded.

Over a century later, Guido of Arezzo (c. 1025) brings to light the chant *Ut queant laxis* with the syllables *ut re mi fa sol la*. Notice that each phrase begins with the next syllable as its following 'step'.

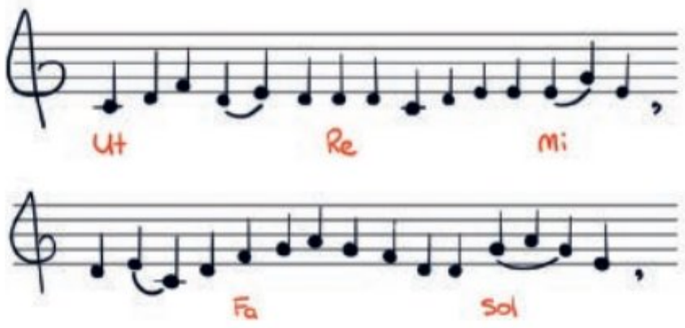


a



b

■ **Figure 1.2 a** Harvesters with concussion sticks. One of the oldest musical instruments known to us is from Ancient Egypt, **b** 9th Century CE modern plainchant (sung chant) *Salve Regina*



■ **Figure 1.3** Guido of Arezzo's *Ut Re Mi* chant

DISCUSS

Think about these two questions and then turn to a partner to **discuss** your answers:

1. **What could be some problems with the forms of 'musical notation' discussed above?**
2. **How do you think the Egyptians could have notated (written down) their clapping patterns?**

ACTIVITY: Twitter bot

ATL

- Creative thinking skills: Generating novel ideas and considering new perspectives

There is a bot on Twitter that regularly sends out examples of graphic notation for musicians to **create** or *perform* from. Visit **https://twitter.com/graphicscorebot**, choose one and work on performing it with body percussion and **vocussion**.

Your aim is to interpret the image within a fixed timeframe. Connect colours to certain sounds, and if there are lines and shapes you get to decide how long, soft, loud or high those sounds are interpreted. If you cannot access Twitter, **use** Figure 1.4.

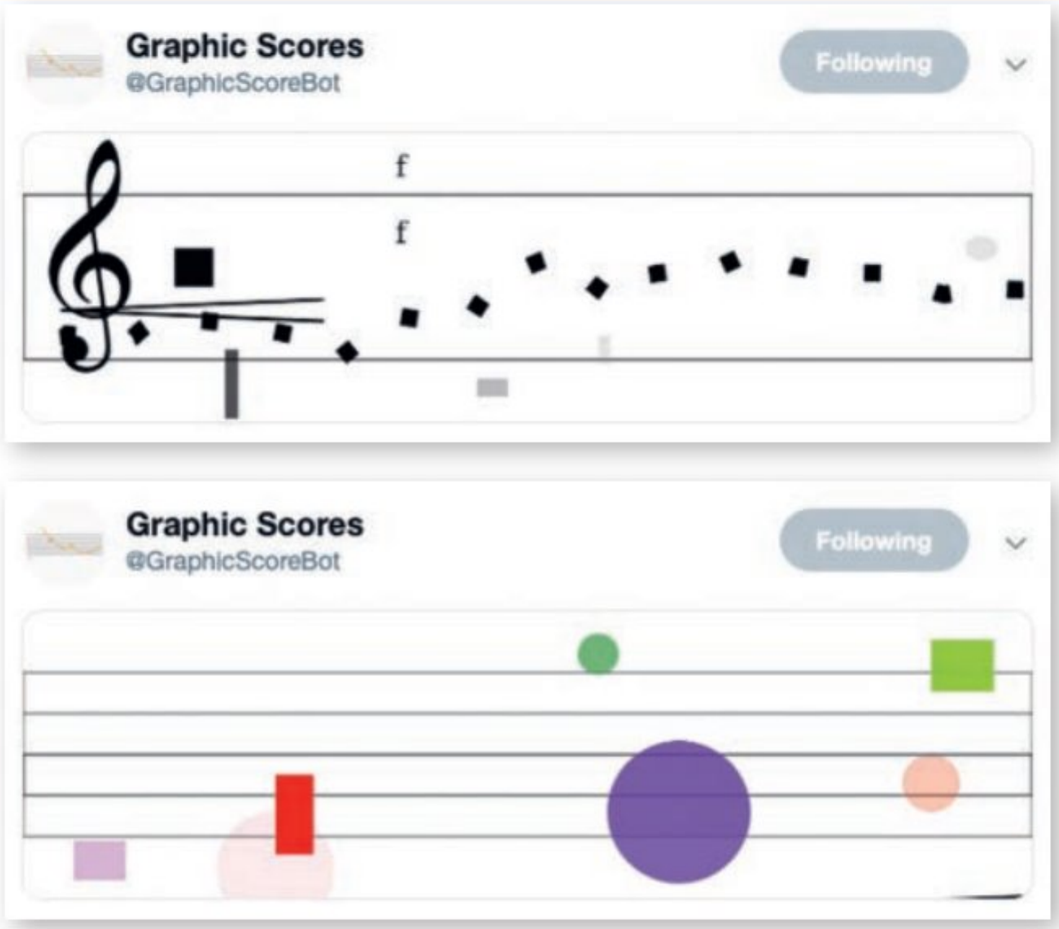


Figure 1.4 Graphic scoring examples from Twitter

Assessment opportunities

In this activity you have practised skills that are assessed using Criterion D: Responding.

Portfolio presentation

Creating a portfolio

Keeping a *portfolio* or *journal* while studying music is very important. You are expected to document your learning, the ideas you engage with and why you chose those ideas (your *process*). It is recommended that you have a manuscript book of some description and the ability to make and store videos / screenshots of your work.

BookCreator is a fantastic tool on Mac / Windows as well as iPad / Chrome. Pages on a Mac can also store both video and audio. Also check other learning systems and blogs provided by your school. These are suitable so long as they allow you to craft, curate and publish your ideas safely. Don't forget that technology is a powerful tool for making learning visible, if done in the correct way.

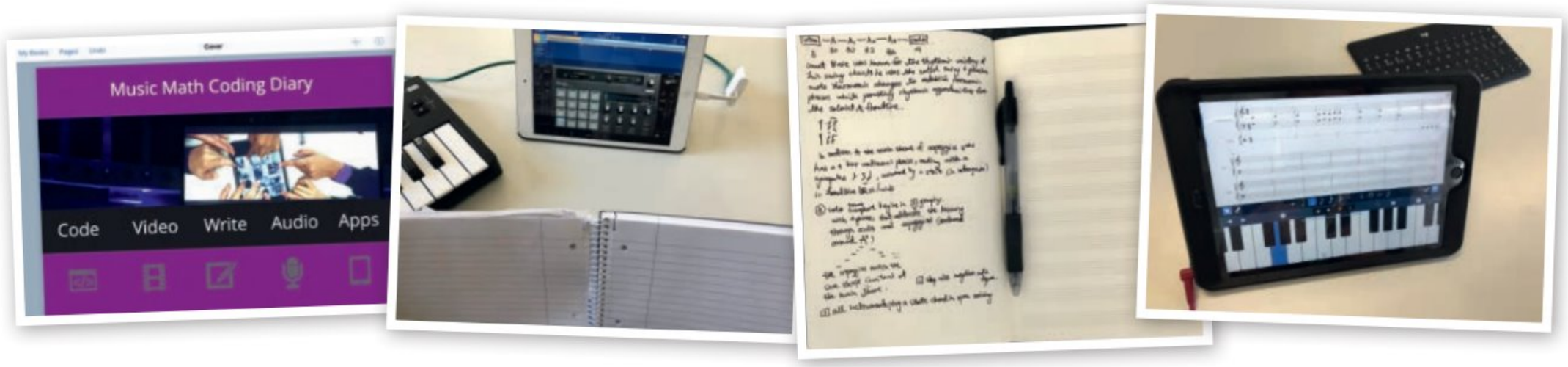
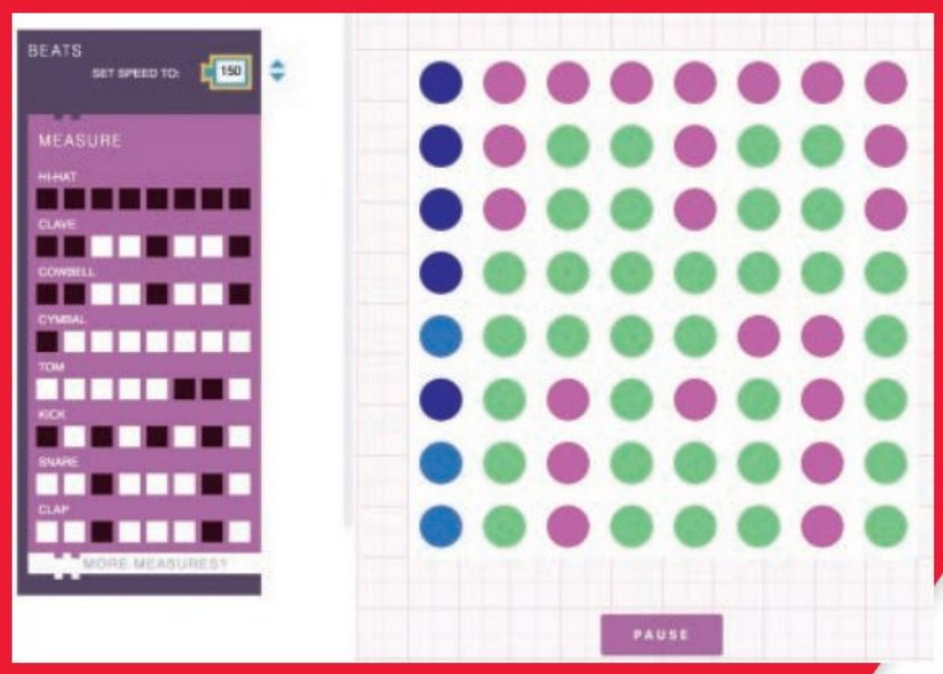
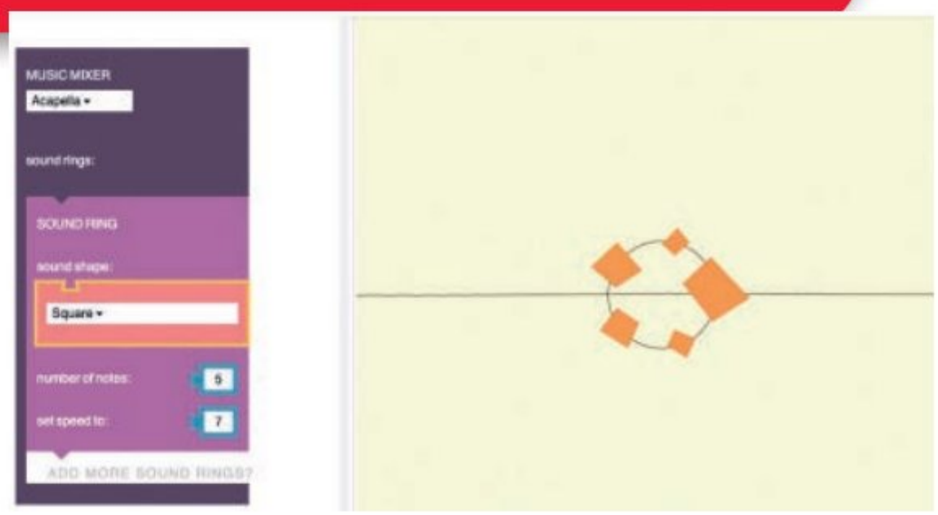


Figure 1.5 Ways to document your learning





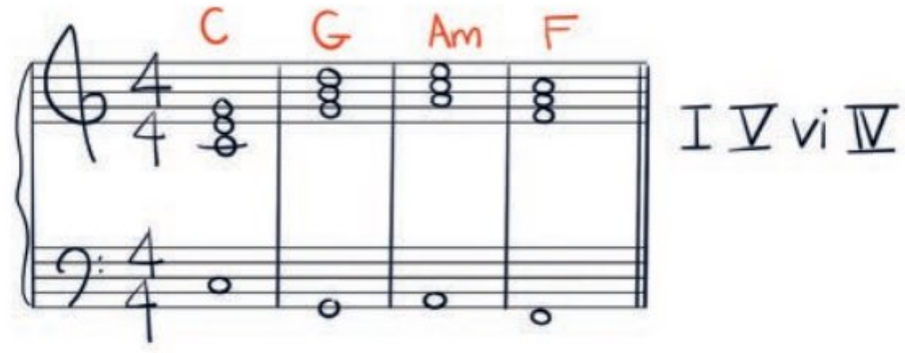
■ **Figure 1.6** Examples of block-style coding

WHAT IS A LOOP, FUNCTION OR COMMAND?

Coding can be a complicated process when you are starting out. Fortunately there are many online tutorials to help you get started. You can visit **http://code.org** for an introduction; however, we will go to 'Made With Code' to start making beats within a visual framework:
https://legacy.madewithcode.com/project/beats

As you have seen, symbols from ancient times to the present can be used to represent sound. This is a form of coding. Here we have two programmable options for creating music. First we can program beats using a grid of boxes, or second we can program a group of pitches using rotating shapes (see Figure 1.6). Spend some time experimenting with the two options and write in your portfolio what you created. Remember, you can draw the shapes you programmed.

In coding, there are important terms to know and then use. Some of the first ones you will encounter are **commands**, **functions** and **loops**. If you are making beats, the command of 'play kick drum' could be represented by a square or by a crochet (quarter-note), whereas the grouping of commands into a string of instructions such as 'play kick and snare drum on counts 1, 2, 3, 4' is called a *function*. Loops are simply repetitions of commands and functions for a set time period.



■ **Figure 1.7** Chord progression: Snow Patrol

This means that music has its own built-in code functions that we naturally just perform. Take **chords**, for example: Chords are three or more notes, stacked on top of each other to form what is called a **triad**. They are then often arranged into a string of more chords called a **progression**.

One of the best websites to see this visually is **www.HookTheory.com** and the example song 'Run' by Snow Patrol uses the chords C major, G major, A minor and F major: **www.hooktheory.com/theorytab/view/snow-patrol/run**

In music theory, we use Roman numerals to represent chords visually. This is shown as I-V-vi-IV where C major is the 1st chord, G major the 5th, A minor the 6th and F major the 4th. This means we can write a function to say 'play the chorus of a song using the progression I-V-vi-IV'.

Did you notice the difference between both major and minor chords and the upper and lower cases of the Roman numerals? The chord A minor has a different sound quality so it has a lower-case *vi*, where all the others have upper-case symbols.

ACTIVITY: Beats, chords and code

■ ATL

■ Media literacy skills: Interacting with media to use and create ideas and information

Search for your favourite song(s) on HookTheory and write down the Roman numerals in your portfolio.

◆ Assessment opportunities

In this activity you have practised skills that are assessed using Criterion A: Knowing and understanding.

! Take action
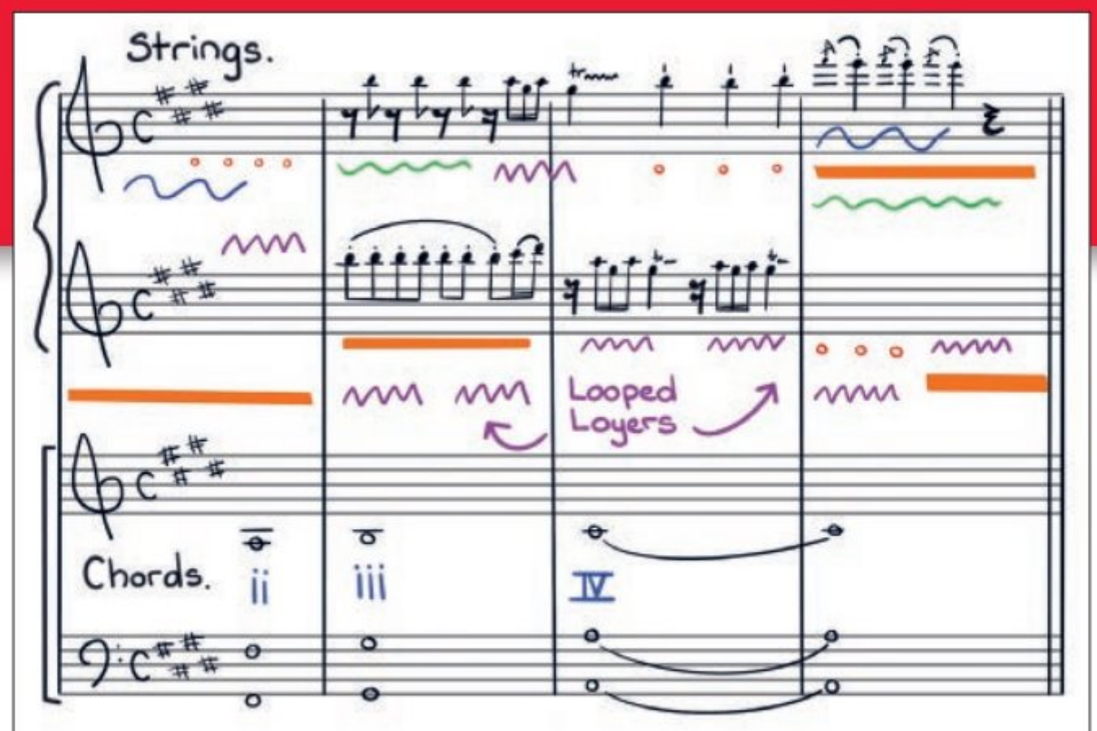
- ! Research and then develop an understanding of the world we live in through connecting symbolic language with sound.
- ! The *Hour of Code* is a global event held each year during Computer Science Education Week. Collaborate with your school, or organise a 'Music-Coding' event using Sonic Pi (**https://sonic-pi.net**) and micro:bit (**https://microbit.org**). As well as participating in the *Hour of Code*, you can finish off each session with a concert of coded music.

HOW ARE MUSICAL SOUNDS CONNECTED TO SYMBOLS?

The world of music has changed with technology. The way humans adapt their needs to their surroundings has meant we find solutions to create new sounds wherever we are.

One of the oldest surviving instruments known today is a flute carved from a crane's bone, dating to the Shang Chinese people of the 14th Century BCE. From there, humans have developed various **idiophones**, **chordophones**, **aerophones**, **membranophones** and now **electrophones**. The ethnomusicologist Curt Sachs, in his book *The History of Musical Instruments*, classifies instruments by their **tone-colour**. By grouping instruments this way, we can actually call on them, like a function, when we want to group particular sounds in music.

Listen to an excerpt of Antonio Vivaldi's 'Spring', reworked by modern composer Max Richter using chordophones and an electrophone, on the playlist. Richter has taken the melodic string parts and **fragmented** their **pitch material** into smaller looped patterns that are then layered over a low sustained chord progression.



■ **Figure 1.8** Max Richter's 'Spring 1' showing violin loops against rising chords ii-iii-IV (mm30–33)

Music has symbols, and communicates as a language with properties similar to mathematics and coding. Max Richter understands how loops can fit within a musical piece because he understands the building blocks of music. By applying knowledge of the building blocks, we can discuss examples from metal to medieval. These building blocks will be repeated throughout this book in activities and side missions: pitch, **rhythm**, texture, structure, tone-colour (timbre), dynamics and expressive techniques.

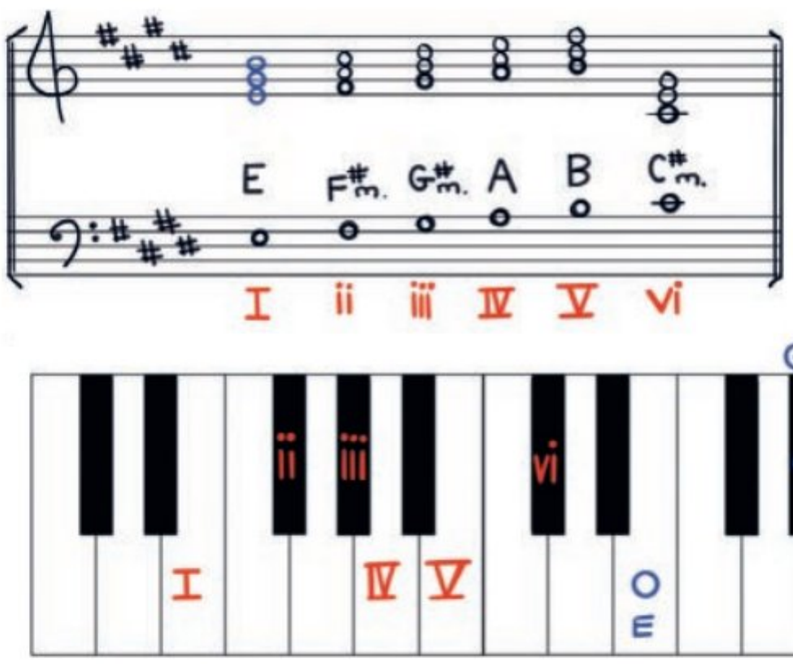
ACTIVITY: How does music communicate with code?

■ ATL

■ Media literacy skills: Comparing, contrasting and drawing connections among (multi)media resources

Using the Max Richter example above, can you see how coding language could have been used to **create** this version of Vivaldi's 'Spring'?

Using the Roman numeral chords provided, change their order and experiment with playing the chords in Figure 1.9 on an instrument. By repeating and overlapping different notes, Richter is able to achieve a continuously evolving texture. Can you do the same in a small group or with your class?



■ **Figure 1.9** Chord-progression activity

◆ Assessment opportunities

In this activity you have practised skills that are assessed using Criterion A: Knowing and understanding.

EXTENSION

Visit the Deutsche Grammophon website to download the app for iOS by Touchpress with both Vivaldi's and Richter's versions of 'The Four Seasons': **www.deutschegrammophon.com/en/album/ipad-app-vivaldis-vier-jahreszeiten.html**. You will see traditional and graphic notation side by side as the work is performed. This is an innovative way of combining technologies.

Listening strategically: Get an IDEA

When you listen to music, try to think of the following acronym to help you respond with knowledge, and correct terminology:

Identify the sounds, or patterns you hear.

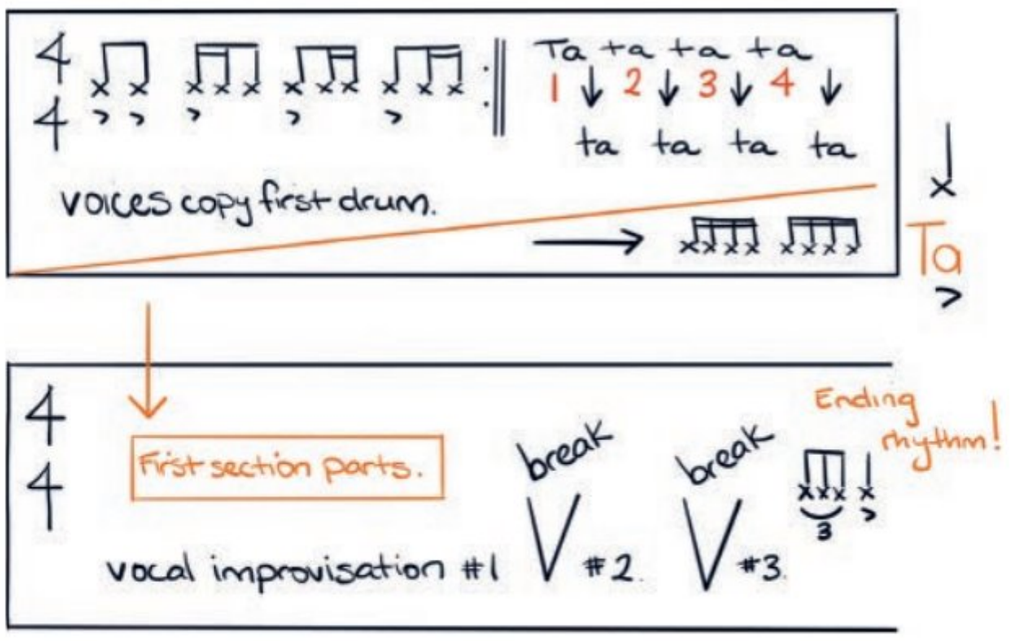
Describe how they are being played, presented, layered.

Explain what role they play in the structure of the work.

Analyse the smaller parts (**intervals**, **motifs**, **sequences**) to their outward larger parts of form, modulations, phrases and **cadences**.

Listen to the track 'Vocussion' from the album *New Impossibilities* by the Silk Road Ensemble. As you listen, can you imitate each layer of sound? Better yet, notate them as symbols? What sounds or patterns can you **Identify**? **Describe**? **Explain**? **Analyse**?

An example is provided below to help you start practising for your portfolio.



■ **Figure 1.10** Vocussion graphic map

MEET THE COMPOSER: ERIC WHITACRE

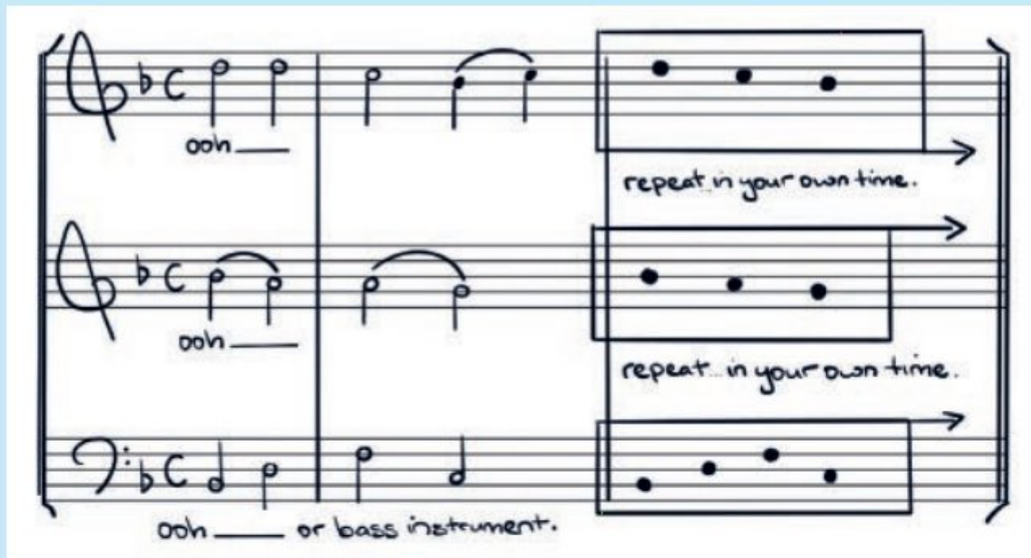


■ **Figure 1.11** An image from the Hubble Telescope

Deep Field is a work composed by Eric Whitacre based on the Hubble Telescope. He was inspired by the struggle and beauty that accompanied the creation of the photos taken by the telescope. Whitacre is a composer who uses the human voice and an innovative approach to technology. He even combined choral singing with dubstep in his work entitled 'Fly to Paradise'.

Using the internet and singers around the world, Whitacre composed *Deep Field* using a form of notation that included an overlapping pattern of musical sounds, much like the stars and constellations in space. A similar example based on *Deep Field* has been composed for you to try and sing or play in your classroom. What do you notice about the way the melodic parts have been written?

Visit the website of Whitacre's *Deep Field* to watch the film and then complete all the badges as you learn about Whitacre's approach to combining science and music: **https://deepfieldfilm.com/badges**



■ **Figure 1.12** Vocal performance piece: Use the boxed notes to experiment with the length, dynamics and spacing of each part

What are some of the ways mathematics has influenced music?

SEE–THINK–WONDER

Look at the image of the spiral galaxy taken by the Hubble Telescope in 2018 in Figure 1.11. What do you **see**? What does it make you **think**? What does it make you **wonder**?

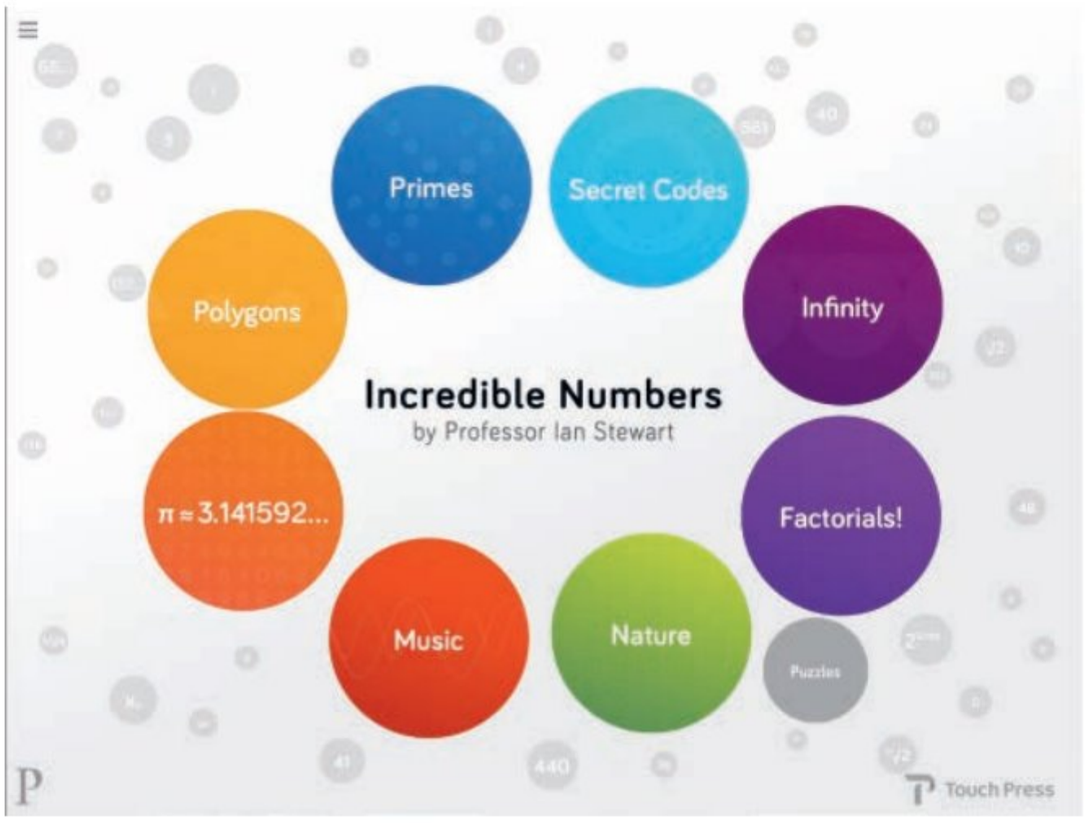
Create a heading in your portfolio and add your responses to these questions as well as your classroom performance **using** Figure 1.12.

WHAT IS THE GOLDEN RATIO?

Mathematics is an amazing language of symbols, ratios, number sets (recurring groupings of natural numbers, integers, rational and real numbers) plus operations, all interacting with each other. We spend time learning the rules and order of operations so that we can utilise and engage with this language called *mathematics*. Music can be exactly the same. In fact, musicians can give voice to many types of different symbols, express emotion through ratios, combine sets or groups of sounds and communicate these to any audience around the world.

According to the book *Incredible Numbers* by Professor Ian Stewart, '… Leonardo of Pisa (1202) wrote an arithmetic text, the *Liber Abbaci* (*Book of Calculation*) explaining Hindu–Arabic numerals 0–9 to a European audience'. This text included an example from studying the breeding habits of rabbits. He was later nicknamed Fibonacci, as was his number set of 1, 1, 2, 3, 5, 8, 13, 21, 34, and so on. Notice the pattern of adding the first two numbers to get the next in the sequence? 1+1=2, 1+2=3, and so on. This led to even further discoveries of the same occurrence in nature, from cones to shells and the Milky Way.

Artists (such as Da Vinci) have used it for painting human subjects, and architects have used it for aligning proportions (such as in ancient Greek monuments).



■ **Figure 1.13** *Incredible Numbers* by Prof. Ian Stewart

Composers including Bach, Schubert, Bartok and Debussy have used it to structure their works. Bach's first book of inventions contains 15 pieces in carefully arranged musical keys. Observe how Bach set about organising the pieces with the *Golden Ratio* (≈ 1.62) and as a **palindrome**. Fifteen pieces divided by 1.62 gives us the middle work in the palindrome, of A major.

Piece and key	Meter
1 **C major**	4/4
2 d minor	3/8
3 e minor	4/4
4 F major	3/4
5 G major	9/8
6 a minor	4/4
7 b minor	4/4
8 B-flat major	4/4
9 A major = **Golden Ratio**	**12/8**
10 g minor	4/4
11 f minor	3/4
12 E major	3/8
13 E-flat major	4/4
14 D major	3/8
15 c minor	4/4

■ **Figure 1.14** Patterns in Bach's first book of Inventions read forwards and backwards

ACTIVITY: Fibonacci as a structure

ATL

- Creative thinking skills: Generating novel ideas and considering new perspectives

Wolfgang Amadeus Mozart was known as a composer of particular lyrical genius. We are going to look at how he structured the following solo piano work around the Golden Ratio. The *structure* of a work is how it is put together, piece by piece, layer by layer. This includes all the connecting parts that help Mozart's ideas transition between rhythm, harmony and melody in the *form* called a **sonata**. Mozart cleverly approaches the overall structure by using the Golden Ratio:

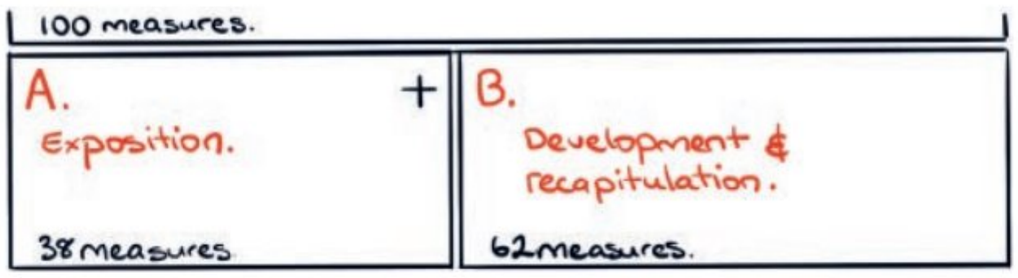


Figure 1.15 Mozart's 'Piano Sonata No. 1 in C Major K279'

The **exposition** is where the main melodic ideas are communicated. Mozart does this in 38 bars.

The **development** is where a composer expands and embellishes their ideas. Combined with the **recapitulation** that brings back the opening material, Mozart uses 62 measures to accomplish this. Within the whole of 100 measures it is structured perfectly as 38+62 or 100/1.62 (the Golden Ratio).

In your portfolio, make a list of the methods for **using** the Golden Ratio or Fibonacci sequences to structure a musical work, showing:

1. **an overarching form,**
2. **the lyrics, and**
3. **the rhythm.**

What other ways and methods might work? Brainstorm a few with your class using the pieces discussed as inspiration. **Create** a mind-map of your findings and record on your device or laptop any musical versions that you create.

Assessment opportunities

In this activity you have practised skills that are assessed using Criterion A: Knowledge and understanding and Criterion D: Responding.

We've just seen how Mozart used the Golden Ratio to structure his sonata, but what about using the Fibonacci numbers within a different structure?

Duo, Mos Def and Talib Kweli have done exactly this with their song 'Astronomy (8th Light)' by outlining the Fibonacci progression in their rapped chorus. This provides a returning theme (or stanza) that unifies the entire work. Visit the video on YouTube and listen for the numbers 1, 2, 3, 5, 8. **https://youtu.be/0d8iu1lE-cM**

Now take a look at how Hungarian composer Bela Bartok used the same set of numbers for a rhythmical structure in the third **movement** of his *Music for Strings, Percussion and Celeste*. Bartok created a palindrome melody for the xylophone with a rhythmic focus on 1 1 2 3 5 8 5 3 2 1 1.

EXTENSION

Ensemble puzzle

Try solving this musical puzzle: If you clap a beat in 4/4 time with 8 **quavers** (8th notes) in each bar, how could you represent a Fibonacci pattern while just clapping?

Hint

Use **accents**!

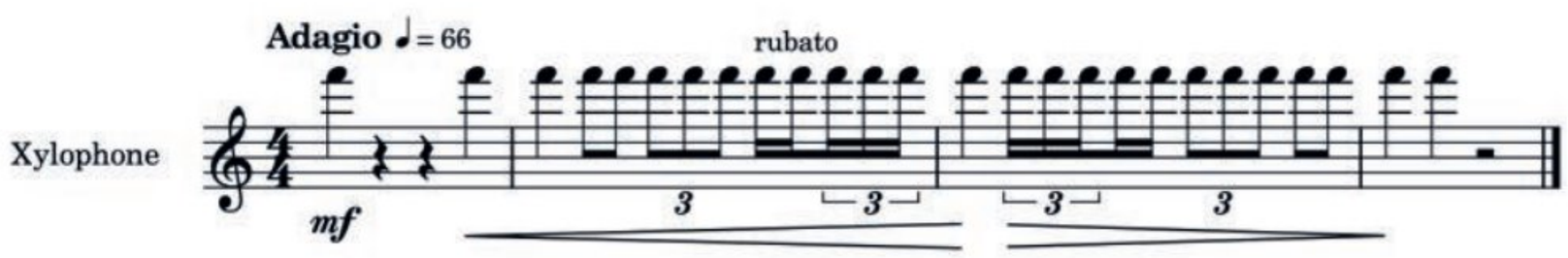


Figure 1.16 Bartok's *Music for Strings, Percussion and Celeste* '3rd movement'

How can we use patterns and sequences to create music?

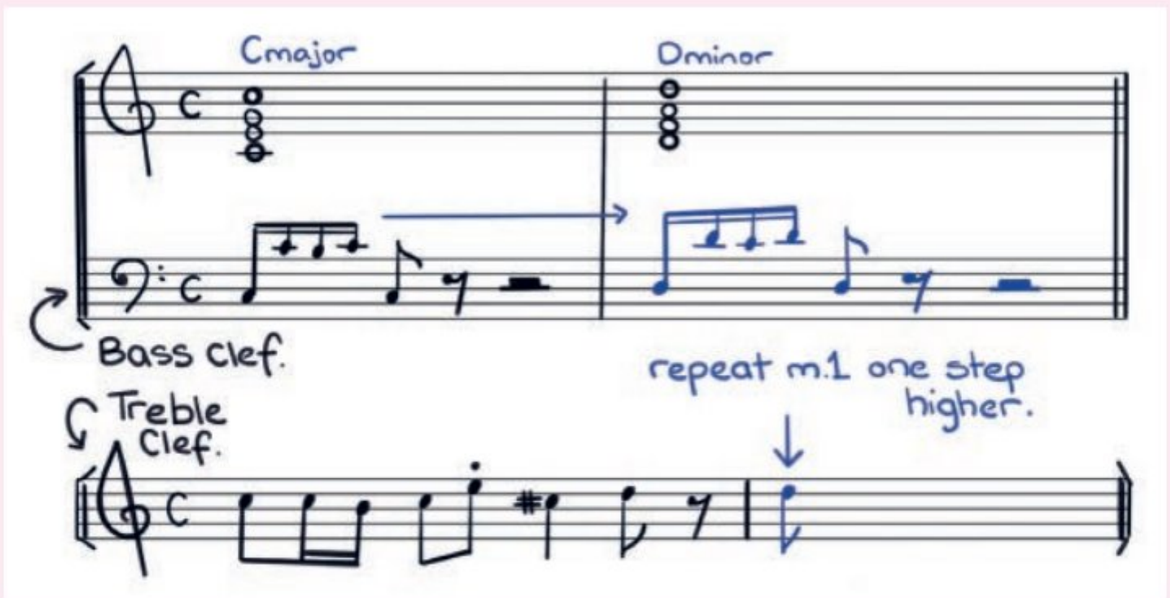


■ **Figure 1.17** Examples of Fibonacci in nature

WHAT IS A SEQUENCE?

Music exploration: Earworms and sequences

Using the opening of Mozart's 'Piano Sonata No. 1 in C Major K279', let us have a quick look at the melody and an important *musical pattern* called a *sequence*. Mozart cleverly writes melodies that repeat and get stuck in your head like an 'earworm'. One of the ways he accomplishes this is by repeating a string of notes in the exact same way, just a little higher or lower. The work below opens with 4 bars of notes that are played over a C major and then D minor chord (I-ii, I-ii). Then in measures 5 to 8 a melody is repeated in the top part but ascending a little higher each time. This is called a *sequence* and it allows you to repeat material, as long as it is based upon the very first version. See if you can make a series of sequences like Mozart's by continuing the pattern:



■ **Figure 1.18** Sequence example from Mozart. See the sequence in blue?

EXTENSION

Ensemble performance

Try warming up on your rhythms, **scales** and **arpeggios**, but only accent certain number patterns, such as 3+4, 2+1, 1+3, 8, 5, 3, 2, 1. Then **create** a sequence of notes and rhythms that will help you **explore** your instrument. You could even try Bartok's Palindrome of 1 1 2 3 5 8 5 3 2 1 1. Your warm-ups will improve out of sight.

Listening strategically: Get an IDEA

When you listen to music, try to think of the acronym **IDEA** to help you respond with knowledge, and correct terminology.

Listen to the piano sonata 'K279 No. 1' by Mozart. As you listen, can you sketch the structure of the work? Include changes in rhythm or melody as smaller observations. What sounds or patterns can you **Identify**? **Describe**? **Explain**? **Analyse**?

ACTIVITY: Fibonacci body percussion

ATL

- Collaboration skills: Working effectively with others

Having a predetermined structure in mathematics, nature and music is incredible. It can free us up to be more creative when we know the framework to work within. The spiral and combination of the Fibonacci sequence opposite clearly **outlines** the macro image of a larger rectangle made up of smaller, yet proportionally equal, rectangles. What if we could **use** this as our basis for making music together?

Using the Fibonacci sequence you are going to interpret the numbers shown opposite into a rhythmically complex work.

1. **Break into eight pairs or groups, and choose one rectangle from this golden spiral (Fibonacci spiral).**
2. **Create a rhythmic ostinato pattern in 4/4 time by clapping, clicking, beat-boxing, and so on. Your ostinato pattern must accentuate your chosen number(s) of the spiral, for example Group 1 can clap 1, 2, 3, 4, like a kick drum. However, those who chose 3 4 could clap 1 2 3, then 1 2 3 4. Alternatively, you could click on every 3rd and 4th beat; it is up to you how you interpret your numbers – be creative.**
3. **The task is finished when each group can a repeat their pattern and b perform their pattern against another.**
4. **What do you notice can happen when you all play together?**



Figure 1.19 Fibonacci spiral from the app 'Incredible Numbers' (see page 9)

Assessment opportunities

In this activity you have practised skills that are assessed using Criterion A: Knowing and understanding and Criterion B: Developing skills.

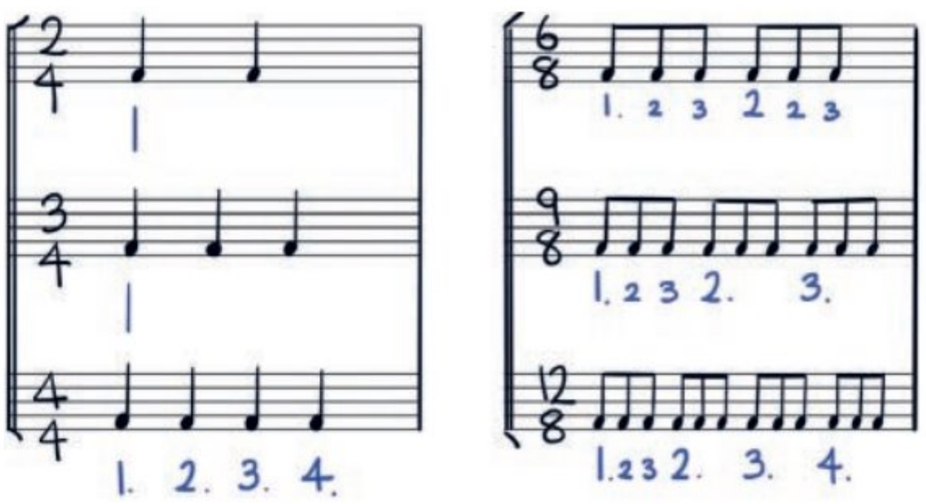


Figure 1.20 Time signatures and note values

Having used body percussion and vocussion to express the Fibonacci sequence, let us go to a different rhythmical focus: the **time signature**.

In music, the top number tells us *how many* beats there are in a bar, whereas the bottom number tells us what *type* of beat is used.

A time signature is not a fraction, for example 2/4 means two **crotchet** (quarter) notes per bar; 6/8 means six quaver (8th) notes per bar. As you can see from Figure 1.20, we can also **subdivide** these beats, as long as they add to the top number in the time signature.

If we continue this pattern of using 2s and 3s, we can get 2+3=5 (Fibonacci), and 2+3+2=7 (not Fibonacci), 2+2+2+2=8 (Fibonacci), and 3+3+3=9 (not Fibonacci). However, if we combine these three results, like the band TOOL did in their track 'Lateralus', with alternating time signatures of 9 8 7, we get the 16th number of the Fibonacci sequence (987) and a very clever use of the Fibonacci sequence to decide which time signatures to use in a piece of music.

ACTIVITY: Movement in time

ATL

- Communication skills: Interpreting and using effectively modes of non-verbal communication

Using the following pieces from the playlist, you are going to move your body in time to the correct time signatures *and* rhythm groupings. The emphasis will be on showing the rhythmic layers of each work through physical movement, for example if you play Dave Brubeck's 'Take Five', you want to move, dance or clap in time to 5/4, but accentuate the grouping of 3+2. Then, if you play '5/4' by Gorillaz, you will want to emphasise the grouping of 2+3 with the guitar part.

Track	Artist	Album
Five	CoCo's Lunch	Invisible Rhythm
5/4	Clogs	Lantern
5/4	Gorillaz	Gorillaz
Money	Pink Floyd	Dark Side of the Moon
7/4	Dave Brubeck	Unsquare Dance
I was brought to my senses	Sting	Mercury Falling

The aim is to **create** a series of body shapes and movements to the music. Remain fixed to the floor and ensure you have space around you. Listen carefully to discern the rhythmical groupings and time signatures. They will **use** combinations of 2s and 3s.

1. **Begin with lower level movements (kneeling on the floor) showing percussion sequences with the floor.**



Figure 1.21 Teachers dancing to 'CoCo's Lunch'

2. **Next, move to middle level (standing but fixed) using patsching, stamping and clapping.**
3. **Finally, move to upper level (arms above head and shoulders), showing shapes that outline the music's patterns.**

As a class, comment on the way each band / artist used rhythmic groupings and how they layered them within the works. You are engaging in the musical concepts of **duration** and **texture**.

Assessment opportunities

In this activity you have practised skills that are assessed using Criterion B: Developing skills, Criterion C: Thinking creatively and Criterion D: Responding.

THINK–PUZZLE–EXPLORE

Listen to the track 'Lateralus' by TOOL and discuss the following questions in groups:

1. **What do you think about the Fibonacci number sequence now?**
2. **What unanswered questions / puzzles do you still have?**
3. **How can you explore this topic further in music?**

Hint

You can find more Fibonacci connections to the band TOOL with a web search and by graphically notating sections of the work 'Lateralus'.

How does a repetitive structure relate to music, mathematics and coding?

ENTER THE NUMBERS 2 AND 3

THINK–PAIR–SHARE

Visualising rhythms from all over the world is possible when we break down patterns into visual rhythmic groupings.

If you have taken any music theory courses, you will recognise the types of questions where you are asked to visualise the beats in a bar and add the correct time signatures. Traditional visualisation questions regarding the whole of a bar are common in the Western tradition, but after watching the video 'A different way to visualise rhythm' at **https://youtu.be/2UphAzryVpY**, **think** about what you learnt from how the video displayed its rhythmic ideas. Then get into **pairs** and discuss this before **sharing** your thoughts with the class. (See Figure 1.22)

ACTIVITY: 2 against 3

ATL

- Creative thinking skills: Focusing on the process of creating by imitating the work of others

In Cuban and other styles such as Latin jazz, there is a grouping of beats called a **clave pattern**. These are also grouped into 2s and 3s and they look like Figure 1.23. You can perform a 3–2 clave or a 2–3 clave depending on the style of music.

Perform the 3–2 **son clave** as a loop and then move directly into the 2 against 3 pattern. Do you think it is easier to follow the notated examples or circular notation to capture the grooves? Investigate this web resource: **https://mathsciencemusic.org/#/project/groove-pizza** to experiment with making some of your own circular rhythm patterns.
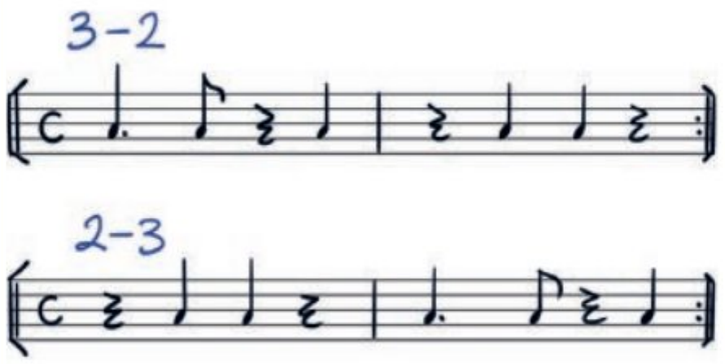


Figure 1.23 3–2 and 2–3 Clave Patterns

Assessment opportunities

In this activity you have practised skills that are assessed using Criterion A: Knowing and understanding and Criterion B: Developing skills.

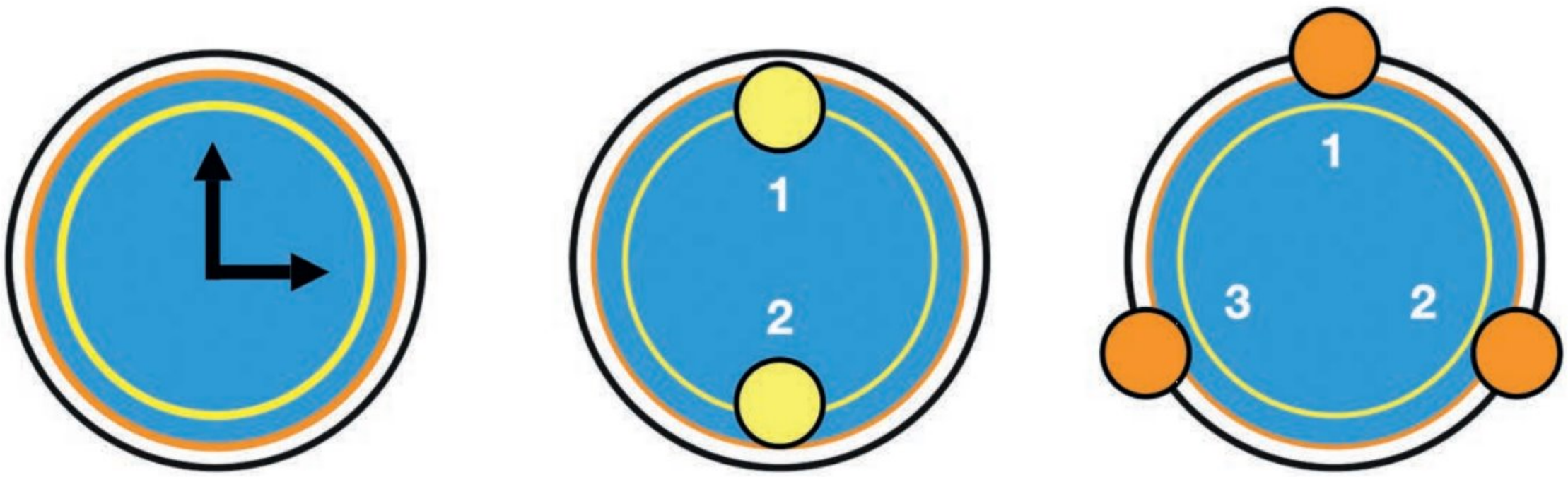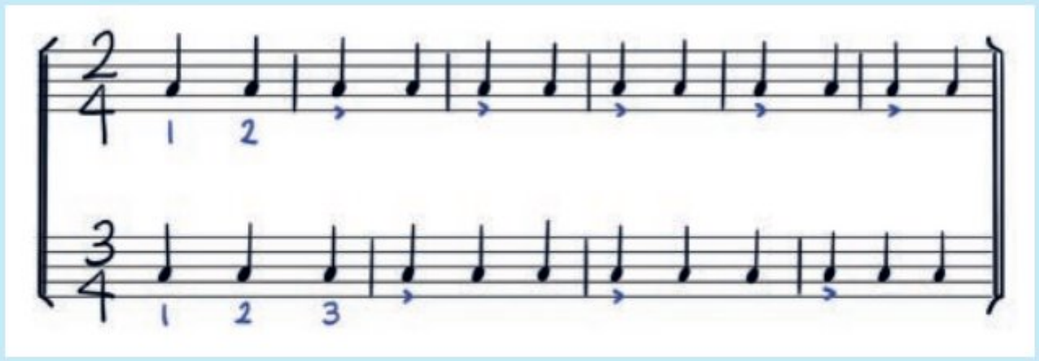


Figure 1.22 Rhythm circles

MEET THE MUSICIAN: CLAYTON CAMERON

Jazz drummer and presenter of the TED Talk 'A rhythem-etic', Cameron presented three short talks on the mathematics behind the music. Visit this link: www.npr.org/programs/ted-radio-hour/388518439/solve-for-x to explore his ideas on 'Why Is Three A Magic Number?' and 'Can Math Make You A Better Musician?'. What is interesting is how closely all these examples use small groupings of notes, in looped and layered patterns. Below is a notated example of a pattern of 2 and 3 lined up so you can see how Cameron performed it. Try to perform this as body percussion within your class.

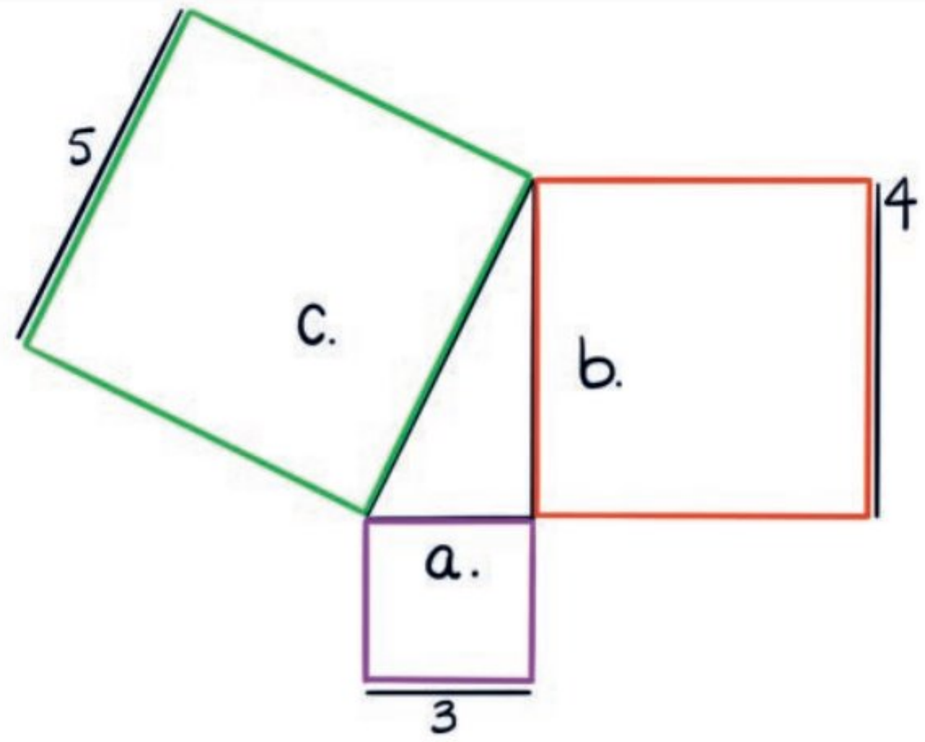


■ **Figure 1.24** 2 against 3 for body percussion

EXTENSION

Ensemble performance

Investigate the music of Australian composer Ross Edwards with his 'Ecstatic Dances No. 2': www.australianmusiccentre.com.au/work/edwards-ross-ecstatic-dances. You will find that he has notated two signatures against each other in the sample score at the link provided. How would you start to rehearse this together?



■ **Figure 1.25** Pythagoras' theorem and music

By now you will have noticed that cultures around the world communicate rhythms in similar ways. Secondly, you will have noticed that symbols are used either to communicate how a rhythm is to be performed, or which beats need to be accented more strongly. Thirdly, you will have noticed that the repetition of numbers and patterns referenced throughout this chapter are a part of how music is remembered, or passed on. If we establish that music is *like* a language, we are beginning to uncover some of its *vocabulary*. And, with a **developing** vocabulary of music that includes concepts like *loops*, *functions* and *sequences*. Let us look at the work of a philosopher called Pythagoras.

Pythagoras of Samos was an early Greek philosopher and mathematician born around 570 BCE. Pythagoras and his followers '… believed that everything in the world was governed by mathematical shapes and numerical patterns'. He has been credited for the theorem of right-angled triangles a2+b2=c2, which you will have encountered in studying mathematics. The theorem produces a series of three numbers called *Pythagorean triples*; that is, the three whole numbers that define the sides of a right-angled triangle, for example if we apply Pythagoras' theorem to a triangle with sides of lengths 3, 4, 5, we get 9+16=25. This can be repeated with other groups of triples: {5, 12, 13}, {6, 8, 10}, {7, 24, 25}, {9, 40, 41}. That we have a geometric shape that has naturally occurring whole numbers is of great benefit to musicians. Look at the number sets above and think back to Fibonacci and time signatures. We have everything we need to start making some grooves.

ACTIVITY: Pythagorean triple beats

ATL

- Creative thinking skills: Constructing mathematical models of rehearsed actions

Try a simple activity of stamping on beats 1+2+3+4+. Speak the word 'left' on each whole number and 'right' on the + symbol; you will find you are marching left, then right, on the spot. Now try clapping on beats 3 and 4. If you are doing this slowly it will be easy to accomplish. If you add the number 5 into the activity, you will be clapping on beat 1 every second repetition, for example, 1+2+3+4+ / 5+6+7+8+ /.

The physical action of **using** your body to perform three simple numbers, in layers, is the basis of **creating** a groove.

Using Pythagoras' theorem, we can see that there are certain groups of numbers that form *triples*. Our aim is to create a combination of rhythms that we can perform and then notate using a circular form of graphic notation.

You can do this online with Groove Pizza: **https://apps.musedlab.org/groovepizza** and an iOS app called Patterning: **www.olympianoiseco.com/apps/patterning**, or in your portfolio by hand.

1. **Choose a set of Pythagorean triples (for example 3 4 5). You can search for others online.**
2. **In a small group, decide how you want to loop a rhythmic pattern of 3 4 5. It could be done like the jazz drummer Clayton Cameron using accents in a fixed time signature, or set out in a line like the 3–2 son clave.**
3. **Once you have decided how you will perform and loop your rhythms, try to represent your pattern visually in a circle. Test out the accuracy of your pattern by performing for another group while presenting your circle notation.**

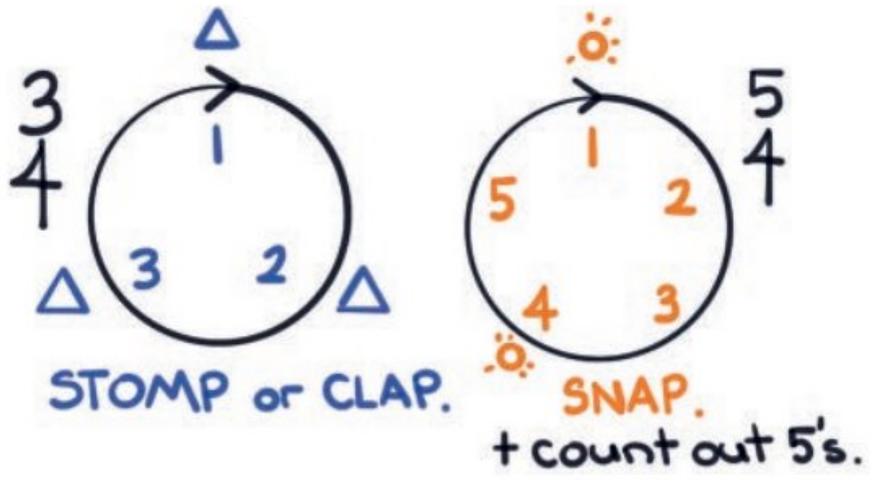


Figure 1.26 Example circle rhythms in 3-4-5 and Groove Pizza examples using Pythagorean triples

Assessment opportunities

In this activity you have practised skills that are assessed using Criterion A: Knowing and understanding and Criterion B: Developing skills.

How does the concept of *structure* relate to music, mathematics and coding?

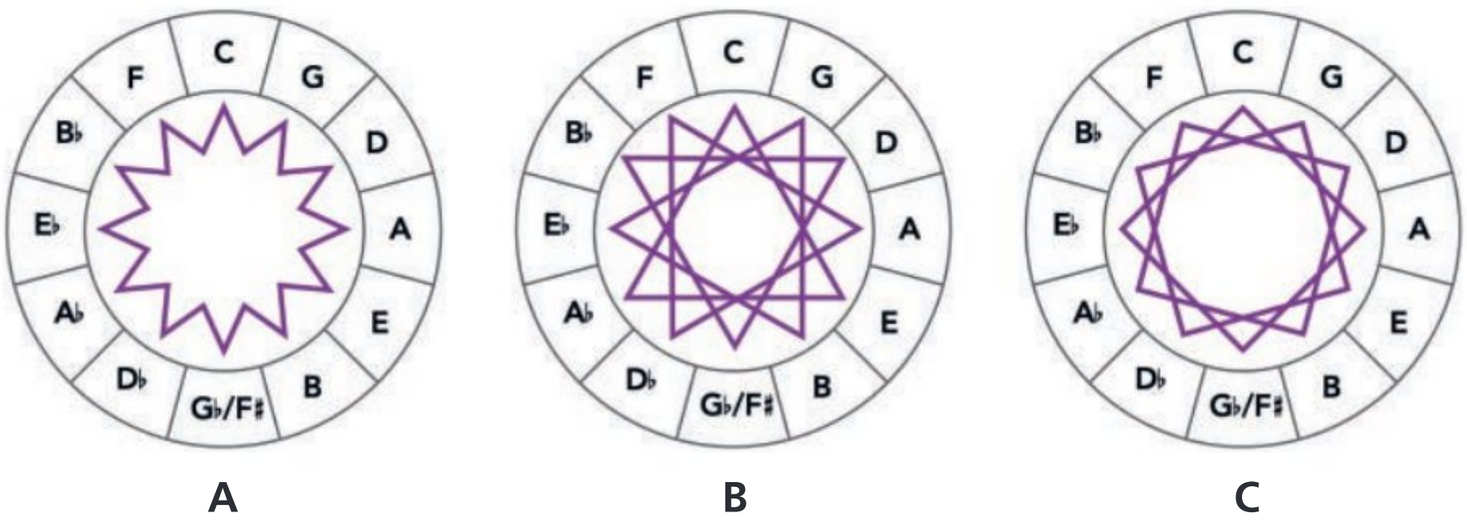
PYTHAGORAS AND CIRCLES OF SOUND

Not only do we owe Pythagoras and his followers for helping us find the hypotenuse, but he is also credited with finding a unique system of ratios for determining intervals in music; intervals such as the octave, perfect 5th, perfect 4th, and so on.

Remember, musicians define intervals as the distances between pairs of notes; distances such as 5ths, 3rds, octaves, and so on. Each interval has a unique tone quality, shape and mathematical ratio. As reported by Ptolemy in his *Harmonics* around 150 CE, the Pythagoreans discovered that when two strings have lengths in ratios of 1:2 (for example, 10cm : 20cm is an octave), 3:2 (30cm : 20cm is a 5th) and 4:3 (40cm : 30cm is a 4th), they produce harmonious sounds, for example, C–C (one octave higher) and C–G (a perfect 5th apart).

In fact, if we go back to the circular idea of rhythm, and add pitch to it, we find more geometric shapes connected to intervals. Much like the **ouroboros**, musical intervals can be represented in a circle known as the *Circle of 5ths* (C moves towards the right to G and then D, all five notes apart). Moving towards the left from C, we get 4ths that rotate to F then B♭; all four notes apart.

The reason these shapes work so well is because of the *harmonic series*, which is a sequence of intervals based on the frequencies of sound as they vibrate through the air. Much like light has a spectrum of colours, one note can have a spectrum of frequencies. Listen to Leonard Bernstein demonstrate this on the piano: **https://youtu.be/iDTj6tBnHlA**. How good is your hearing?

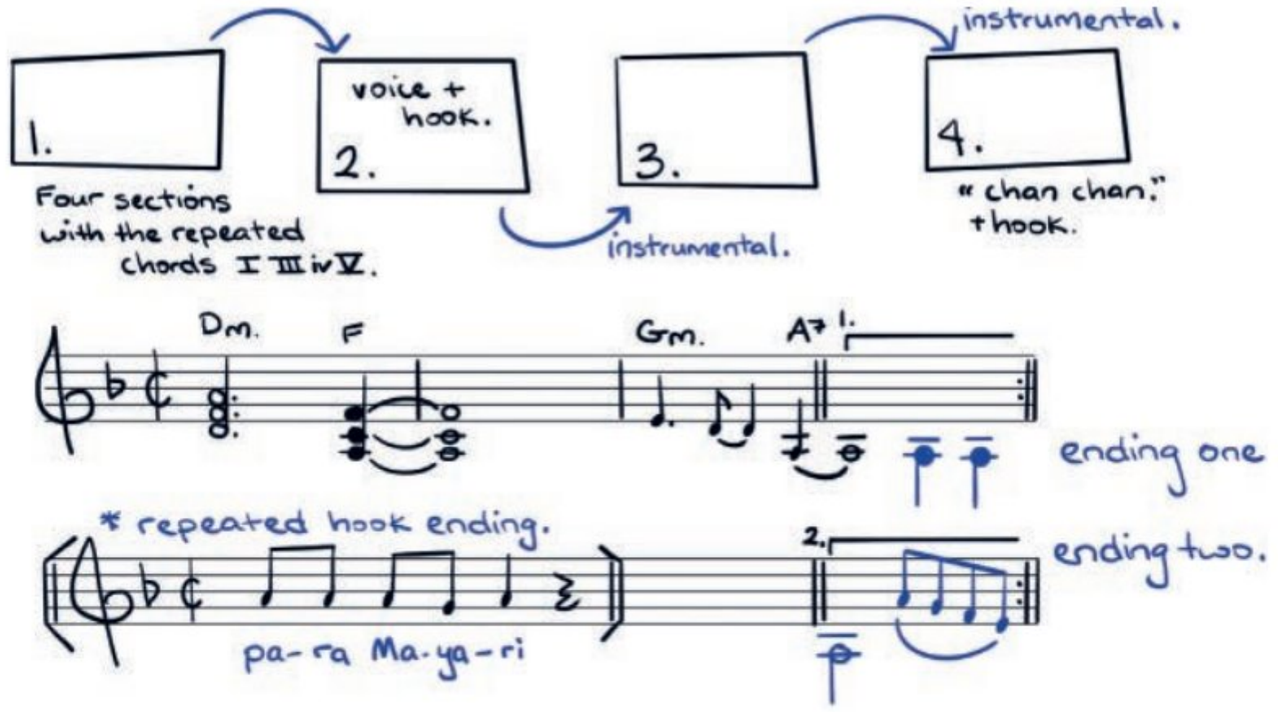


■ **Figure 1.27** Geometric pitch circles: Circle A (5ths, 4ths), Circle B (major 3rds, minor 6ths), Circle C (major 6ths, minor 3rds)

Listening strategically: Get an IDEA

When you listen to music, try to think of the acronym **IDEA** to help you respond with knowledge, and correct terminology.

Listen to the piece 'Chan Chan' in the playlist and write in your portfolio what you can **identify** in this short excerpt. Try to **describe** any patterns you can hear in the rhythm, such as the *son clave*. Take particular note that the melodic instruments also play rhythms and **lock into** (line up with) patterns of other instruments. An example has been provided for you to add more detail to (**explain** and **analyse**) as you listen to the work:



■ **Figure 1.28** 'Chan Chan' listening structure map

ACTIVITY: Circular melodies

ATL

- Creative thinking: Make unexpected or unusual connections between objects and / or ideas

Using the circles in Figure 1.27, generate a series of short melodic patterns that we can experiment with. Start on C and move between the three circular shapes. For example, C moving clockwise to G in the first circle (perfect 5th interval), then keeping G we move to the second circle and move clockwise from G to B to E♭ (all major 3rd intervals) and then keeping E♭ we go to the third circle and move clockwise from E♭ back to C.

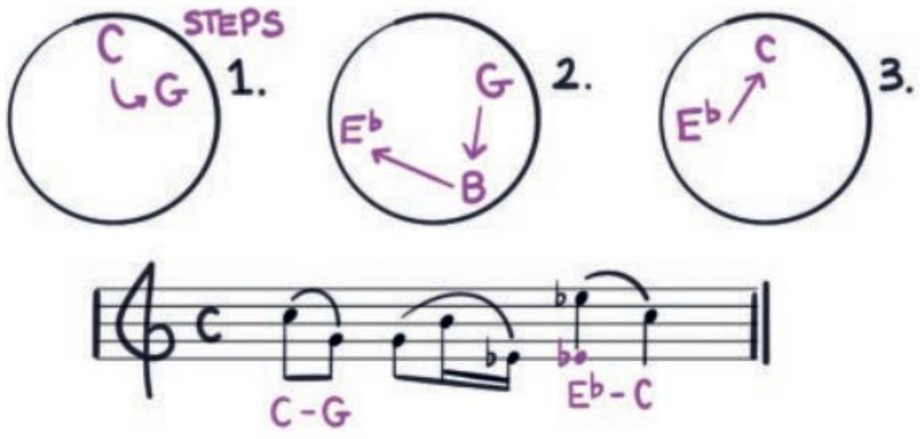


Figure 1.29 Composing with circles just works!

Assessment opportunities

In this activity you have practised skills that are assessed using Criterion B: Developing skills and Criterion C: Thinking creatively.

ACTIVITY: South Indian talas

ATL

- Communication skills: Using intercultural understanding to communicate ideas

We will now sit and clap what is known in Indian music as a **tala**. A *tala* is a rhythmic cycle that continues throughout a work called a **korvai** (a rhythmic composition). In the Southern Carnatic Indian tradition, the shortest 'rhythm circle' is made up of 3 beats, while the longest has 29 beats.

In this activity we will look at two talas in 3 and 5, while singing the intervals of the ratio 2:1 (an octave A–A') and 3:2 (a 5th A–E).

1. **Start by humming a drone on the note A. Find a comfortable range and have everyone hum that pitch.**
2. **Introduce the A' an octave above and choose half the group to sing this pitch on an *oooh* sound.**
3. **Lastly, introduce the note E (the 5th) and choose a group to hum this pitch.**
4. **In Carnatic Indian music, the tala of 3 beats is called *eka* and you perform it with a *laghu* (clap of the hand, then counting of the 5th and 4th fingers – Figure 1.30).**

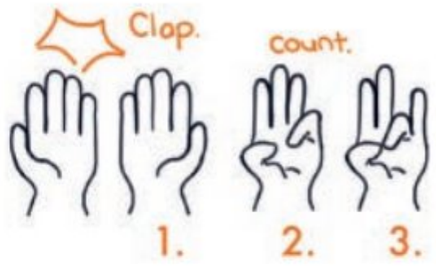


Figure 1.30



Figure 1.31

5. **The tala of 5 beats is called *rupaka*. It is performed with a *drutam* (clap and wave of the hand in Figure 1.31) followed by a *laghu*.**
6. **As a group, prepare to sing the octave on A and the 5th interval again as a drone. Then while singing, clap the cyclical tala patterns of eka or rupaka. Can you do it?**

Assessment opportunities

In this activity you have practised skills that are assessed using Criterion B: Developing skills.

EXTENSION

Ensemble performance

With your ensembles, have each person sing or play one note at a time from the harmonic series. Keep the notes sustained and listen to the result. You will get an incredible blend of tones that you can experiment with!

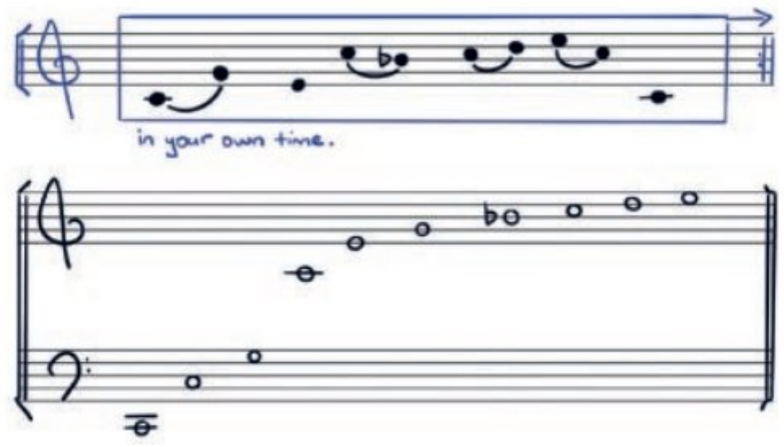


Figure 1.32 Harmonic series for voice

Is music a language?

SEE–THINK–WONDER

ATL

- Creative thinking skills: Making guesses, asking 'what if' questions and generating testable hypotheses

Here is an image of a student's vocal composition **using** graphic symbols to represent sounds she made with her mouth. The entire work is based on the instrumental *sequenzas* by Luciano Berio (1925–2003), who we will investigate in later chapters. What do you **see**? What do you **think** about the symbols and shapes? What does it make you **wonder** about her composition process?

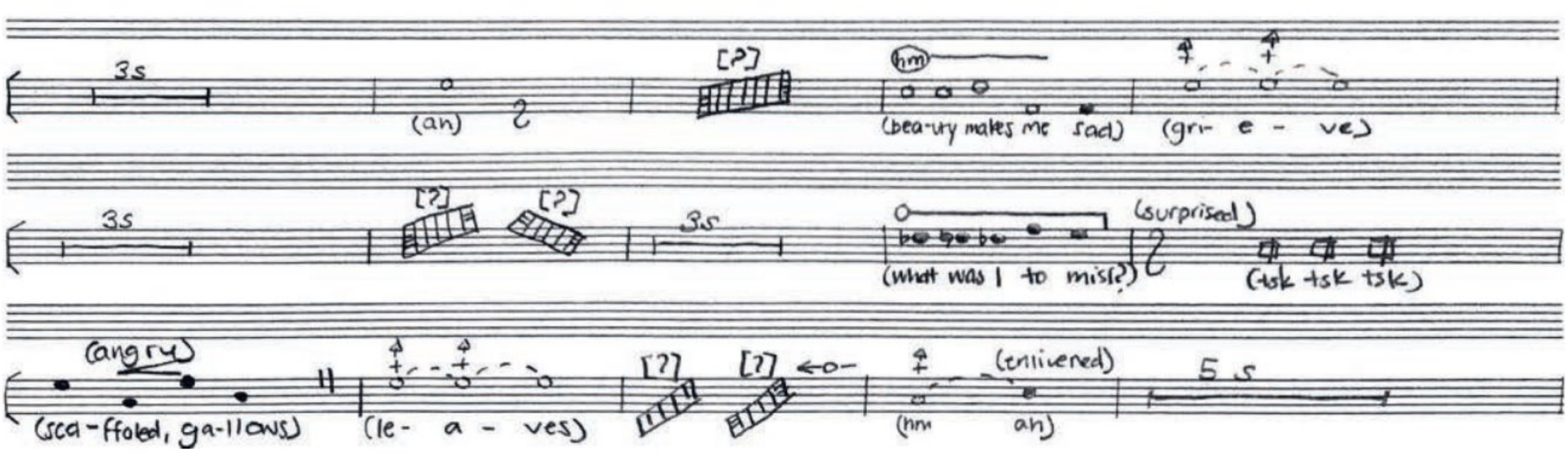


Figure 1.33 Student graphic composition, 'At Crossed Purposes'

DOTS, SQUIGGLES, SOUNDS AND DRUMS!

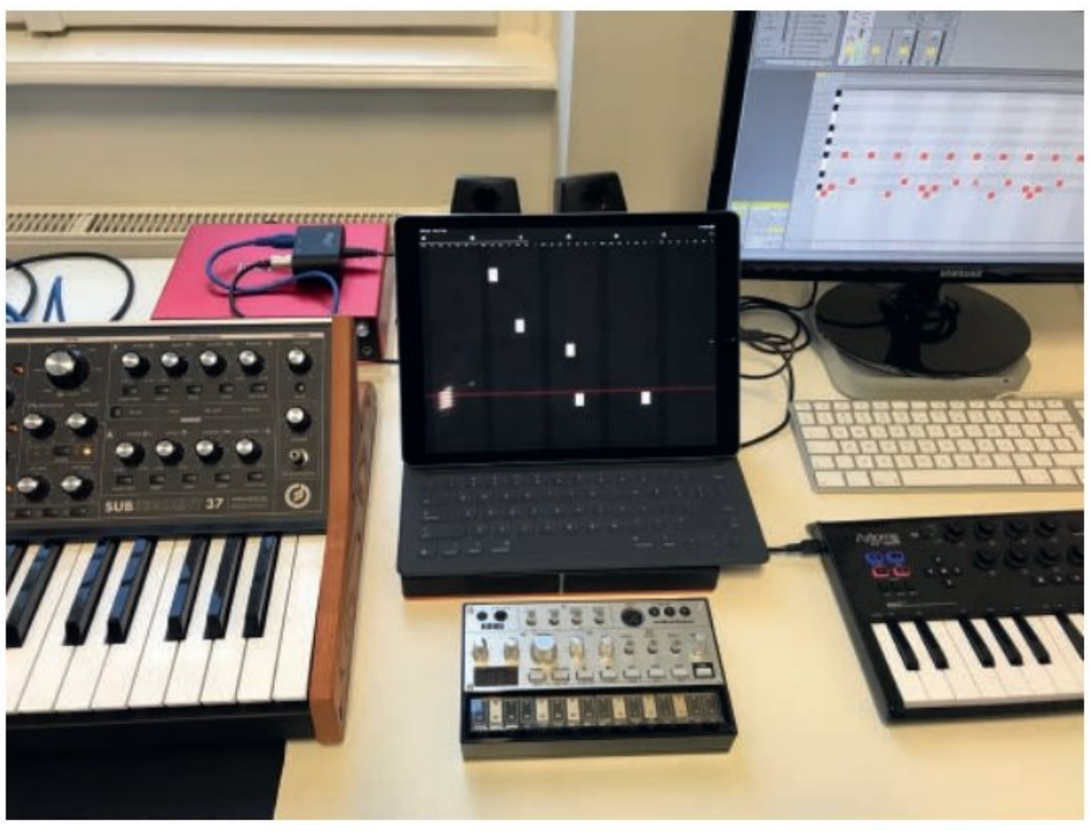


Figure 1.34 Examples of graphic notation in software

Notation in music is simply a method of writing down what is to be remembered and then performed. It is a way of communicating sound that relies on the interpreter (here the performer) deciphering the message as best they can.

Think of it like a form of code where the performer sees the *commands* and *functions*, and then performs them using their expression and knowledge of the art form.

For example, in the Baroque period (17th Century) composers such as François Couperin (1668–1733) would write a keyboard **suite** with one of the movements titled 'Courante'. This meant a movement that was written in 3/2 time with a change at the end (or cadence). Performers of the time needed to be aware of such an instruction. In modern scores, the composer goes so far as to direct each and every volume marking (dynamics), how a violinist should hold their bow, which mallets a percussionist is to use and how a colour is to be sung! To do this, composers and performers developed symbols for communicating musical messages. Not all forms of notation mean you have to use actual notes; very often, graphic scores can include shapes, colours and time lines.

THINK–PAIR–SHARE

ATL

- Transfer skills: Comparing conceptual understanding across multiple subject groups and disciplines

Using the software program Liquid Music, here is a dubstep *loop* in graphic notation (Figure 1.35). The framing shows it is 4 measures long, with the kick playing the characteristic triplet (grouping of 3 notes) on top. Notice also that there are vertical spikes that refer to **velocity** (how hard the beat is struck can be varied). It is an excellent way to break down the components of a genre. A second example is provided of the same beat in a grid format using Ableton Live (Figure 1.36).

How does art contribute to the power of graphic scores?

Think about concepts such as line, texture, rhythm, colour and space. Note down your answers in your portfolio and **pair** with a partner to search for other ways to notate popular drum patterns, then **share** your findings with the class.

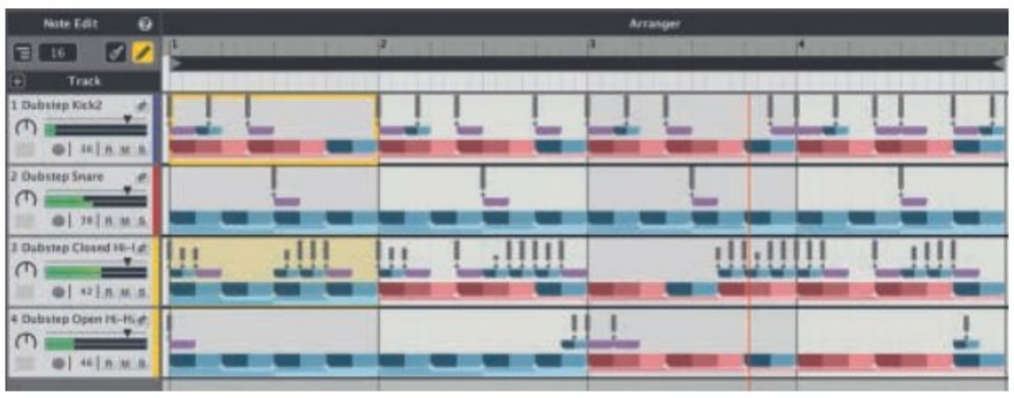


Figure 1.35 Dubstep loop in Liquid Music

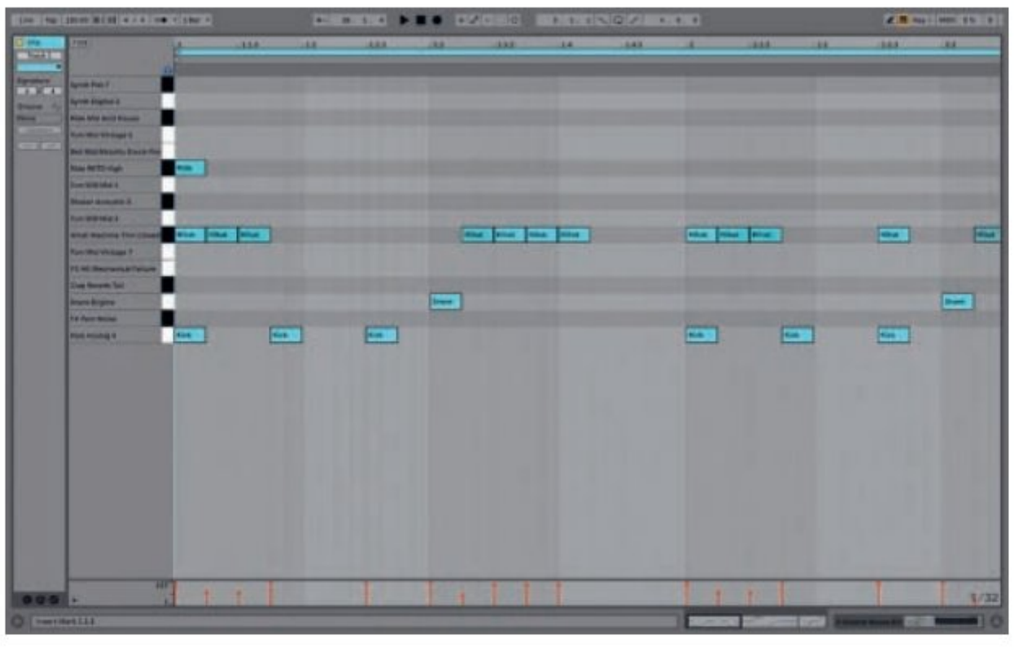


Figure 1.36 Dubstep loop in Ableton Live



Figure 1.37 Artist, musician, composer Dong-Won Kim playing the janggu, 2015

In South Korea, there is a traditional form of drumming that has been preserved by masters such as Dong-Won Kim. Dong-Won is a member of the SilkRoad Ensemble and instructs on traditional music, including improvisation, all over the world. He currently teaches music as a professor of Wonkwang Digital University in South Korea. When it comes to music, Dong-Won speaks particularly about rhythms. The rhythms he demonstrates are like a language that is derived from research into the different playing techniques of styles in Korea called *samulnori*, *p'ungmul* and some *shamanist* rituals. Furthermore, particular patterns have **vocables** that sound like the double-headed drum he plays, called a *janggu*. Strokes are made with two mallets; one for low tones called *gungch'ae* and one for high tones, *yolch'ae*. The vocal sounds are notated using a combination of lines and shaded circles.

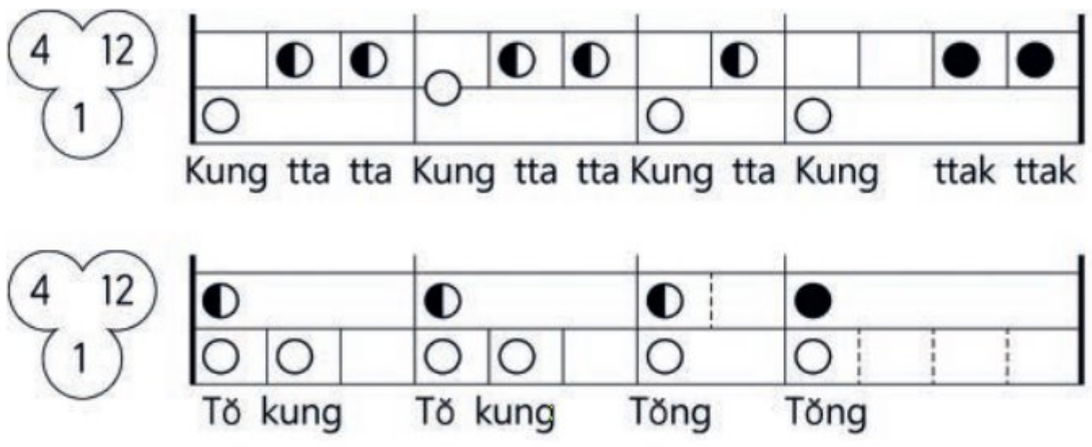


Figure 1.38 Korean drum notation with vocables (provided by Dong-Won Kim)

ACTIVITY: Korean drum notation

ATL

- Communication skills: Using intercultural understanding to communicate ideas

Following Figure 1.38, draw up your own grid of spaces and add in your own circle style notation. You may not have a janggu with you, but you can chant the vocables or **use** body percussion.

A student example is given in Figure 1.39. Notice that the circular symbols in each grid have a vocal sound that you need to chant first.

Use an audio recording device (GarageBand, SoundTrap or iZotope's mobile audio recorder on your device) to document your own performance.



Figure 1.40 Book written by Dong-Won Kim about the Tale of Samulnori; it is being recorded with a USB microphone to GarageBand

Assessment opportunities

In this activity you have practised skills that are assessed using Criterion B: Developing skills and Criterion C: Thinking creatively.

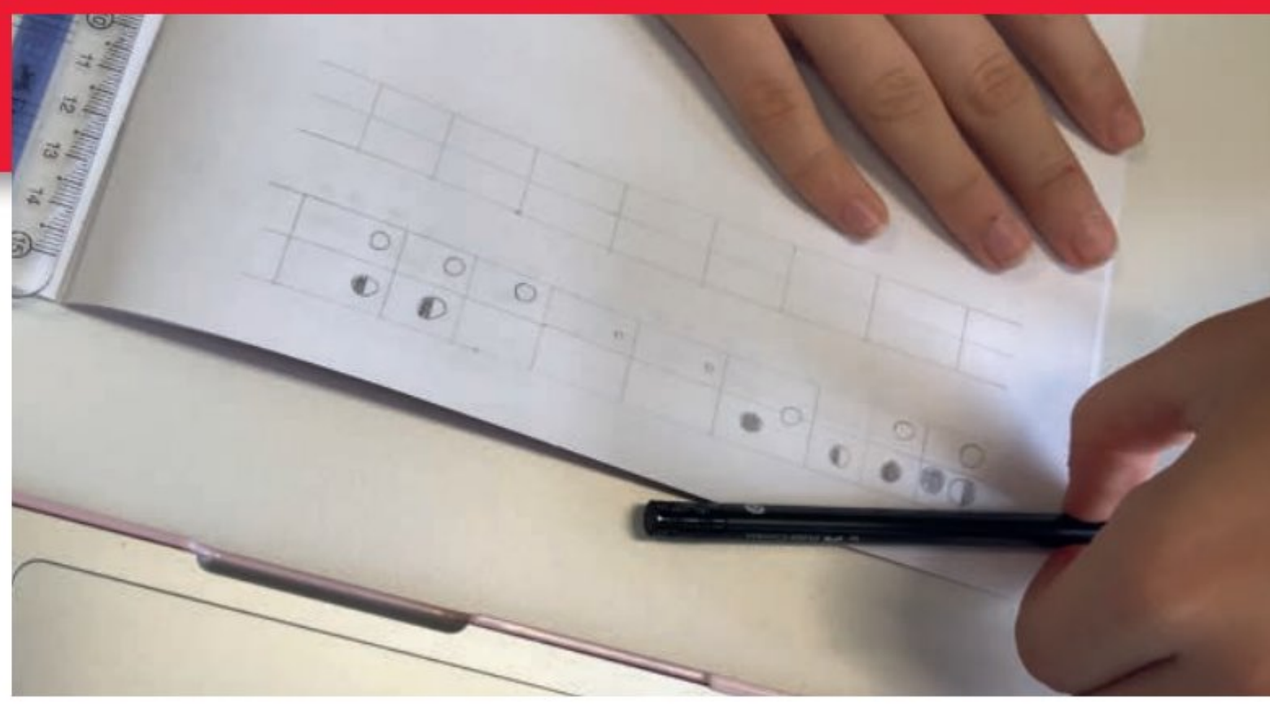


Figure 1.39 Korean drum notation by a student

I USED TO THINK… BUT NOW I THINK

'5 1/2 Examples of Experimental Music Notation' is an article from Smithsonian: **www.smithsonianmag.com/arts-culture/5-12-examples-of-experimental-music-notation-92223646**. Read through it as a class. This chapter has looked at many different aspects of representing sound as a language. What did you think when you began this chapter? Take a minute to think back and discuss this question with your class.

Then write down your own point of view in your portfolio, starting with: **I used to think…**

Now, whether your ideas have changed or just been challenged, write a few sentences starting: **But now I think…**

EXTENSION

Ensemble performance

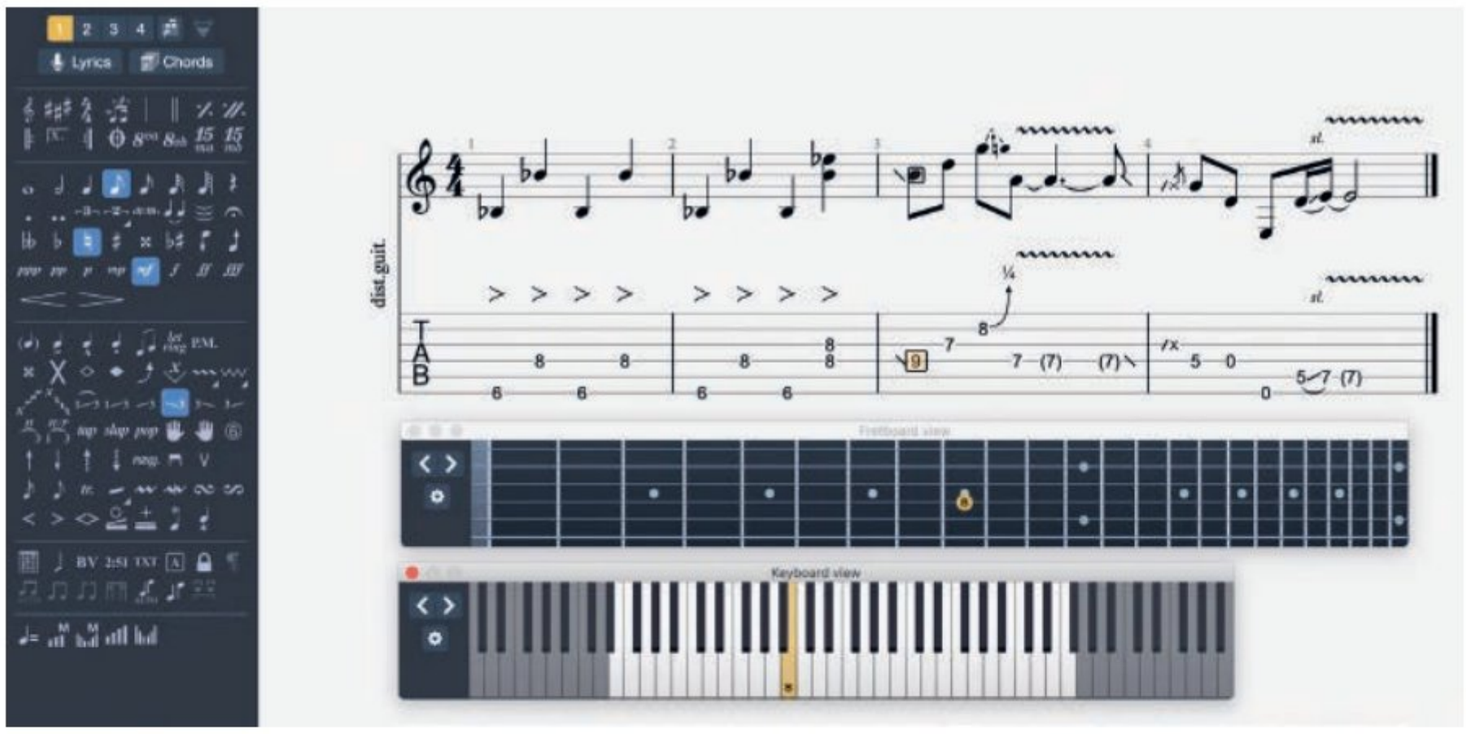
Visit the website of J.W. Pepper to see the work entitled 'Voodoo' by Daniel Bukvich (Wingert-Jones Publications: **www.jwpepper.com/Voodoo/2260180.item#.XmasHi8o-fA**. With your ensemble director, you could either analyse the work with its audio and score preview, or perform it live. What do you notice about the way the music has been written?

What is the difference between traditional and graphic notation?
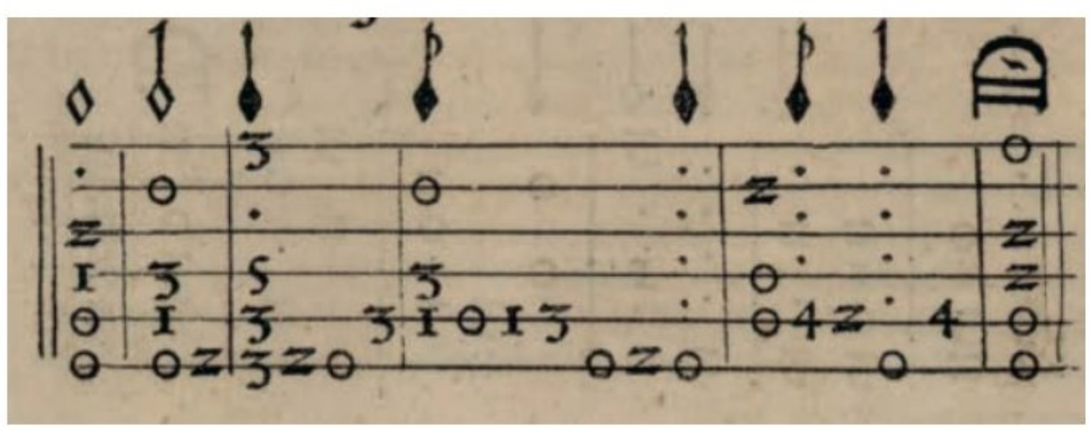
SEE–THINK–WONDER

Jimi Hendrix is well known as one of the most influential guitarists of his time. In Figure 1.41, you can see the opening of his 'Purple Haze' in traditional and guitar tablature notation, or **tab** as guitarists call it. Tab is a form of mapping that communicates to guitarists where to place their fingers to perform the required notes. It is not a new concept, but the extra symbols and directions on the image have **developed** over time. Figure 1.42 shows a work by Luis de Narváez (c. 1500–c. 1550) for Vihuela/Lute (an early ancestor of the guitar).

What do you **see** when comparing the two examples? How do you **think** this method was invented? What does it make you **wonder** about other instruments and ways of notating sound?



■ **Figure 1.41** Guitar tablature of the opening of Jimi Hendrix's 'Purple Haze', made in Guitar Pro 7



■ **Figure 1.42** Lute tablature by Narváez as an instruction on page 3 of his publication

HENDRIX, CODING AND COLOUR IN MUSIC

Music can be represented by all forms of symbols. Here we get to use actual code, with thanks to two easily available resources. Imagine you have a performance coming up and you could program with commands and functions everything from the tempo to the sample being looped. Then, mid-performance, you want to change the sample or melody live. This concept was recently discussed in an article by WIRED entitled 'DJs of the Future Don't Spin Records – They Write Code': **www.wired.com/story/algoraves-live-coding-djs**. You never know; you may be the next hit DJ!

1 **https://microbit.org** has a platform where you can edit all your code before downloading it to a small computer board. **https://makecode.microbit.org** is the place to start creating. Having the actual device is optional, we are first experimenting with the code to make music.

Hint

Visit this website for more detailed information: **https://microbit-micropython.readthedocs.io/en/latest/music.html**

2 **https://sonic-pi.net** is a computer-based platform for Mac or PC created by Sam Aaron (**https://twitter.com/samaaron**) focused on code-based creation and performance. With it, you can DJ live and code your own music with its built-in samples.

ACTIVITY: Coding with Sonic Pi and micro:bit

ATL

- Communication skills: Following instructions accurately. Understanding and using mathematical notation

The aim of this activity is to represent a melody **using** computer code as a form of notation. Screenshots are provided below to show you what the final product should look like.

We are going to start with a remix of sorts called 'Variations on a Theme' by George Frideric Handel (1685–1759) from his work *Air with Variations HWV 430*.

Open the Makecode program for the micro:bit and enter the notes for the main melody in Figure 1.45. Be aware that you need to choose the length of the note carefully. You will notice that the tune itself has numbers underneath. These connect to the pitches on the keyboard and how we can code them into our chosen programs. Micro:bit's software allows you to choose the notes with blocks directly, whereas in Sonic Pi you need to be aware of something called *MIDI* (numbers representing pitch for a computer) and *play* and *sleep* commands.

Open Sonic Pi and enter the details shown in Figure 1.46. A second layer of code is provided underneath to add a drum loop that repeats continuously. Now can you make musical edits to the piece live?

A *command* is something that is carried out; the *functions* group those commands into a string of events (such as perform with tempo BPM is 80). Document this process in your portfolio and experiment with altering the notes and samples in Sonic Pi. We will revisit these programs in later chapters.

Assessment opportunities

In this activity you have practised skills that are assessed using Criterion B: Developing skills and Criterion C: Thinking creatively.

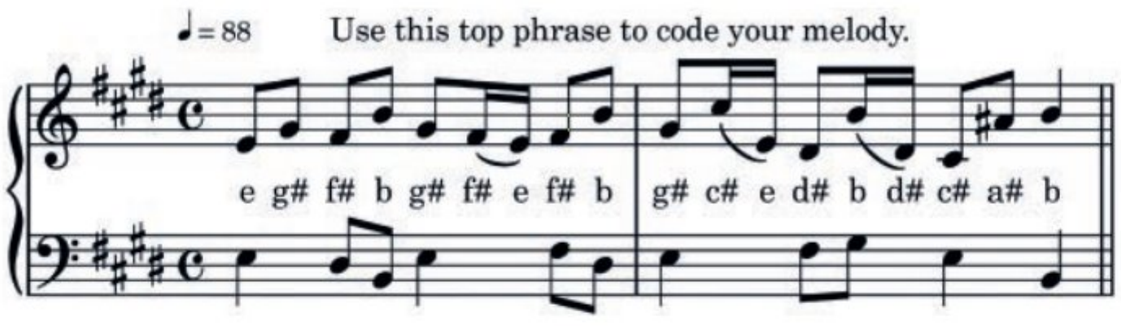
Blocks | {} JavaScript

```
input.onButtonPressed(Button.A, function () {
    music.setTempo(80)
    music.playTone(330, music.beat(BeatFraction.Half))
    music.playTone(415, music.beat(BeatFraction.Half))
    music.playTone(370, music.beat(BeatFraction.Half))
    music.playTone(494, music.beat(BeatFraction.Half))
    music.playTone(415, music.beat(BeatFraction.Half))
    music.playTone(370, music.beat(BeatFraction.Quarter))
    music.playTone(330, music.beat(BeatFraction.Quarter))
    music.playTone(370, music.beat(BeatFraction.Half))
    music.playTone(494, music.beat(BeatFraction.Half))
    music.playTone(415, music.beat(BeatFraction.Half))
    music.playTone(554, music.beat(BeatFraction.Quarter))
    music.playTone(330, music.beat(BeatFraction.Quarter))
    music.playTone(311, music.beat(BeatFraction.Half))
    music.playTone(494, music.beat(BeatFraction.Quarter))
    music.playTone(311, music.beat(BeatFraction.Quarter))
    music.playTone(277, music.beat(BeatFraction.Half))
    music.playTone(466, music.beat(BeatFraction.Half))
    music.playTone(494, music.beat(BeatFraction.Half))
})
```

■ **Figure 1.43** Handel for micro:bit



■ **Figure 1.44** Handel's theme for micro:bit Sections A and B



■ **Figure 1.45** Handel's theme from 'The Harmonious Blacksmith'

```
use_bpm 40
live_loop :amen_break do
  sample :loop_amen, beat_stretch: 2, cutoff: 90
  sleep 2
end

use_bpm 80
live_loop :foo do
  play :E4
  sleep 1
  play :Gs4
  sleep 1
  play :Fs4
  sleep 1
  play :B4
  sleep 1
  play :Gs4
  sleep 1
  play :Fs4
  sleep 0.5
  play :E4
  sleep 0.5
  play :Fs4
  sleep 1
  play :B4
  sleep 1
end
```

■ **Figure 1.46** 'The Harmonious Blacksmith' with drums in Sonic Pi

MEET THE ARTIST: MIKE HAMAD

Mike Hamad draws music as he listens to it. What do you imagine when you listen to music? In this video by *The New York Times*: **https://youtu.be/vrxh15SCqjM**, Mike Hamad outlines how he sketches what he calls a *schematic* using the overall form or structure of a song. Mike uses his aural skills (ability to identify intervals, patterns, notes, rhythms) to create a flowchart or timeline of events in music, as he perceives it.

What other styles of music could this approach work with? What would be the first steps to making these diagrams yourself?

Assessment opportunities

In this activity you have practised skills that are assessed using Criterion B: Developing skills.

ACTIVITY: Making a schematic

ATL

- Communication skills: Interpreting and using effectively modes of non-verbal communication
- Information literacy skills: Presenting information in a variety of formats and platforms

Using the example provided by Mike Hamad and the pieces we have discussed so far, your activity is to choose a song that you want to sketch. It can be anything; any style or genre. Then, following the checklist below, put on some headphones and start sketching your schematic. Remember: The format, shape and style are up to you!

1. **Structure: What is the overall 'thing' holding the music together? Do sections repeat?**
2. **Texture: How many layers of sound can you hear? Do they change at all?**
3. **Tone-colour: Each sound source can be represented by a colour or shape. How have you identified each one in the work you have chosen?**
4. **Pitch: Have you demonstrated whether the work has a melody, chords or bass line? Is there a low or high sound source? Or multiple layers playing a repeating melody?**
5. **Rhythm: What style or genre is it? Can you show the main beat? Are there repeating patterns (called *ostinatos*)?**
6. **Dynamics and expressive techniques: Does the volume of the work change? How does it change?**

To the right are two student examples from completely different styles of music.

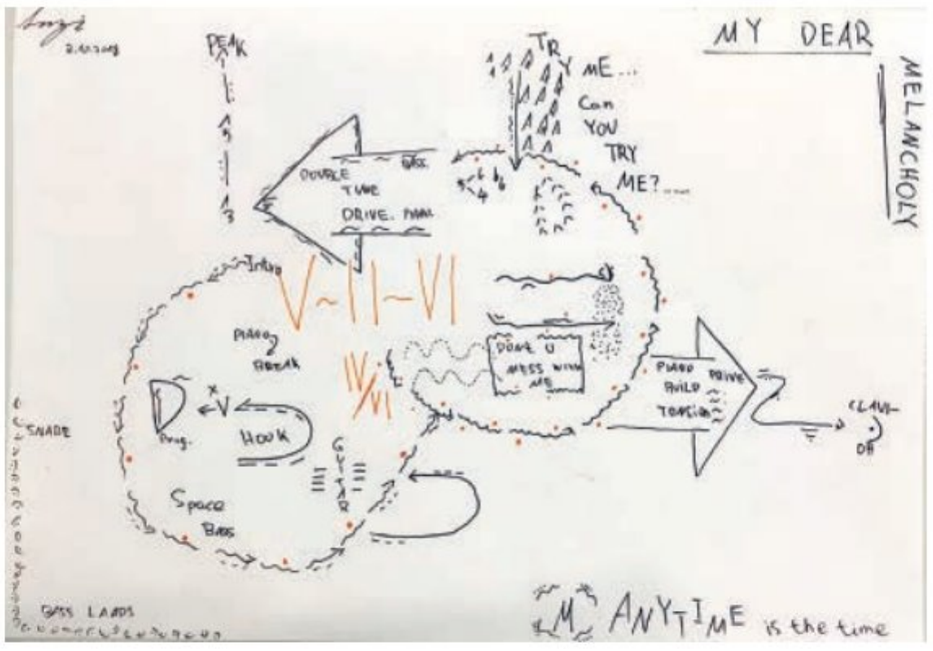


Figure 1.47 'Anytime' by The Weeknd from the album *My Dear Melancholy*



Figure 1.48 The SIAMÉS' 'The Wolf' from their first single 'Bounce into the Music'

How well have these students represented the building blocks of music? How innovative is their approach?
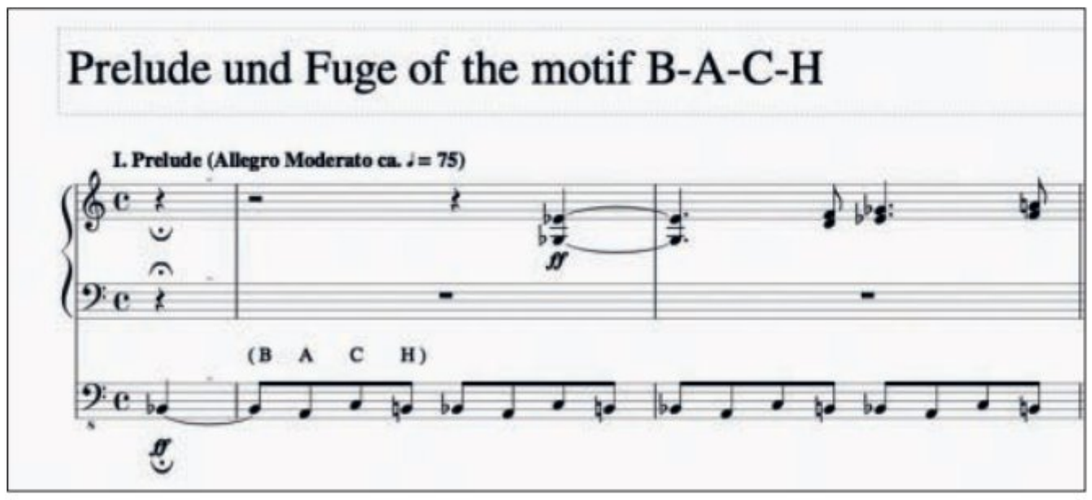
Assessment opportunities

In this activity you have practised skills that are assessed using Criterion A: Knowing and understanding and Criterion C: Thinking creatively.

Do music and mathematics share the same rules as code?



■ **Figure 1.49** A Caesar cipher, with its circular rings for deciphering messages



■ **Figure 1.50** Franz Liszt's Bach motif in MuseScore

COMPOSING WITH YOUR NAME

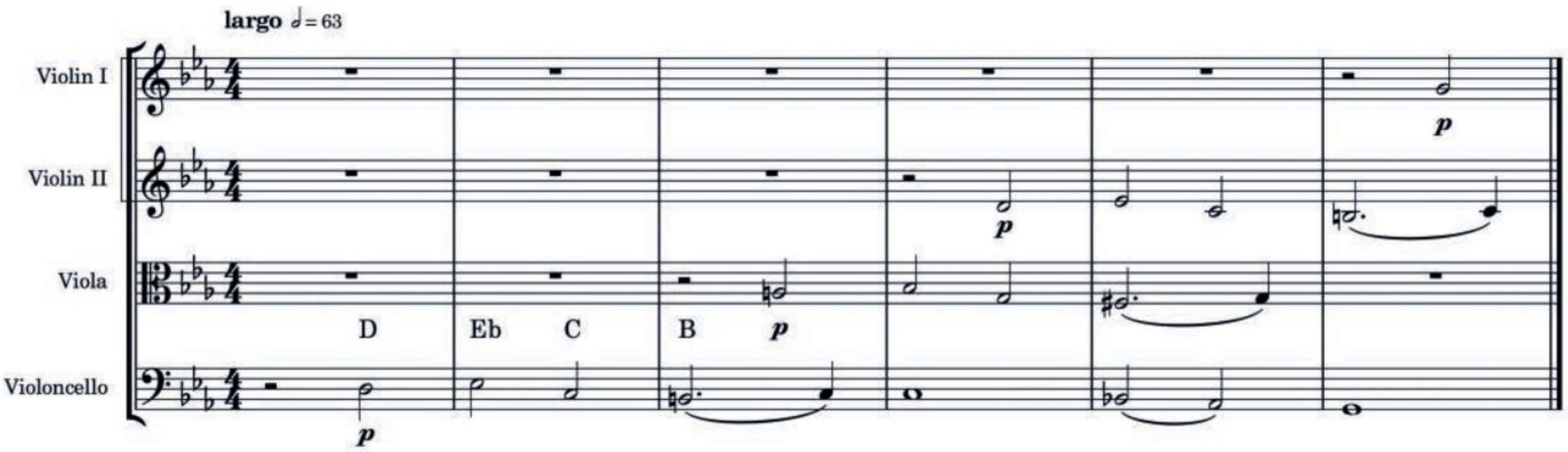
Musical cryptography is an art form of language and music combined. Usually it involves exploiting the relationship between letters and notes, but it can be explored much further. J.S. Bach encoded his name into some of his works using the phrase B♭-A-C-B natural (B natural is H in the German system).

Many other composers have also used BACH's name in their compositions in creative ways. As you will see in Franz Liszt's 'Präludium und Fuge über das Motiv B-A-C-H', composed in 1855, the motif appears from the very start.

Visit **www.wqxr.org/story/277113-top-five-deployments-b-a-c-h** to hear more uses of Bach's name. Then describe in your portfolio how they use B♭-A-C-B.

But what about names (such as yours) that may not work as easily with the notes A-B-C-D-E-F-G?

Dmitri Shostakovich (1906–1975) also used the German system to create his own musical cryptogram by using his initials, rather than his full name. The letters D S C H became D-E♭-C-B, and the incredible *String Quartet No. 8 in C minor, Op. 110* outlines this beautifully in all five movements.



■ **Figure 1.51** Shostakovich's name in code from *String Quartet No. 8 in C minor* '1st Movement'

What makes this **string quartet** special is Shostakovich's continuous changing or development of his encoded theme. The first movement presents it in a type of **canon**, slowly repeating it in pairs but higher each time, then the second movement repeats this idea by making the notes longer and higher. The third movement is very clever in changing the rhythm; the fourth movement changes the notes entirely but you can still hear the shape of DSCH. Then finally the fifth movement presents the theme in the cello with a light counter-melody on top. All of these changes have a musical name: **motivic development**.
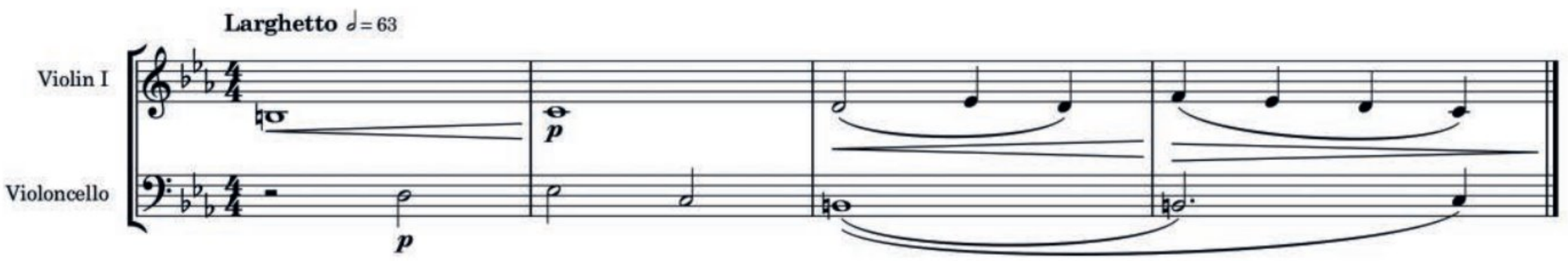
THINK–PUZZLE–EXPLORE

Organise yourselves into small groups and discuss what you **think** a *cipher* is. When you think you have an answer, collectively search the term 'Caesar cipher' online or visit the book / app *Incredible Numbers* by Professor Ian Stewart. Here you can interact with a model of what Julius Caesar used (c. 1900 BCE) to pass on messages secretly. Caesar's idea was to write out the alphabet, and underneath this to place a 'shifted' version to rearrange the original message.

Puzzle: How secure do you think this type of message encoding was? What would you need to break the code?

Without the 'key' (that is, the secret information needed to decode the encrypted text) it would be difficult to interpret what was being communicated. Therefore, in a cipher the *plaintext* (original message) and the *ciphertext* (encrypted message) need an *encryption algorithm* (method to encode the text) and a *decryption algorithm* (method to interpret the message).
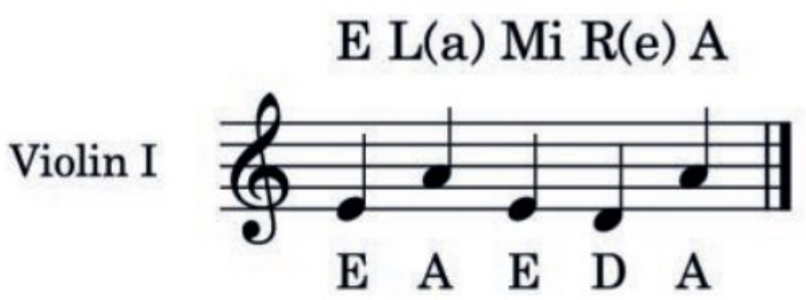
How could you **explore** the world of ciphers further?



■ **Figure 1.52** Shostakovich's name in code from *String Quartet No. 8 in C minor* '5th movement'

Shostakovich uses various techniques to change the length of the notes, the intervals between the notes and even how he layers them on top of each other. This allows him to present his encoded name in many colourful ways. It is recommended that you listen to the 'String Quartet No.8' as well as the third movement of his *10th Symphony* on the playlist.

As a final example, Shostakovich's *10th Symphony* also contains a unique cryptogram spelling out the name of one of his students, Elmira Nazirova, by combining **solfège** (do re mi) and note names. ELMIRA becomes E – L(a) is A – Mi is E – R(e) is D – and then there is A.



■ **Figure 1.53** Elmira's name in code

Musical cryptograms come in all shapes and sizes. But composers started to realise the limits of using the German system.

French musicologist Jules Écorcheville (1872–1915) developed the grid pictured opposite, which you will agree makes the process of encrypting any letter into music much easier. If your name has letters that do not fit the English alphabet you can now add those as well.

A	B	C	D	E	F	G
H	I	J	K	L	M	N
O	P	Q	R	S	T	U
V	W	X	Y	Z		

■ **Figure 1.54**

ACTIVITY: Musical cryptology

■ ATL
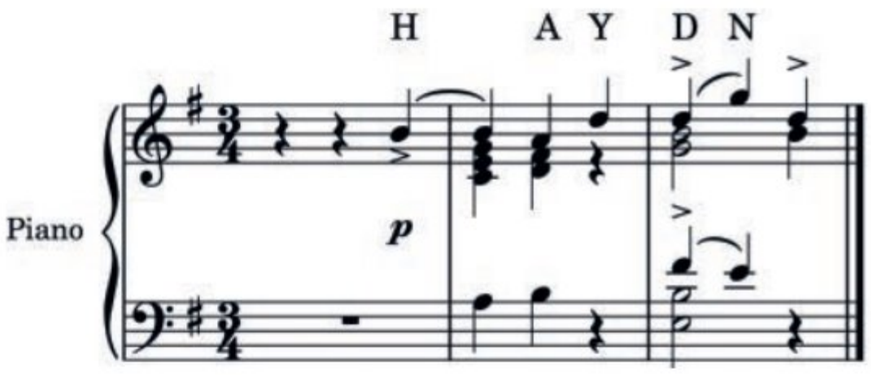
■ Transfer skills: Inquiring in different contexts to gain a different perspective

Using your portfolios, match up your name with the grid pictured, and then using a notation app like Symphony Pro or MuseScore, enter your names as notes on a blank piano treble and bass clef stave. Use any rhythm! You can even copy patterns from Shostakovich as long as you are using letters from your name! Reflect in your portfolio what it sounds like.

◆ Assessment opportunities

In this activity you have practised skills that are assessed using Criterion A: Knowing and understanding and Criterion B: Developing skills.

Joseph Maurice Ravel (1875–1937) was given the challenge of composing a piece that was based on a cryptogram of Joseph Haydn's name. Ravel's version is particularly beautiful as it uses the French-grid on page 26 to turn HAYDN into B (using the German system for the first note)-A-D-D-G. Ravel **presents** the HAYDN theme forwards, backwards and even upside-down.



■ **Figure 1.55** 'Haydn' encoded by Ravel

ACTIVITY: Ravel and Haydn

ATL

■ Creative thinking skills: Focusing on the process of creating by imitating the work of others

Using the musical code that you made of your name in the previous activity, try to **present** your encoded name backwards and upside-down, like Ravel.

Just to experiment, **use** notation software like MuseScore to copy and paste them on top of each other into a piano part. Take screenshots of your experiments and then listen to Ravel's 'Menuet sur le nom d'Haydn' on the playlist. What are some other ways you could imitate Ravel's coding experiment?

Assessment opportunities

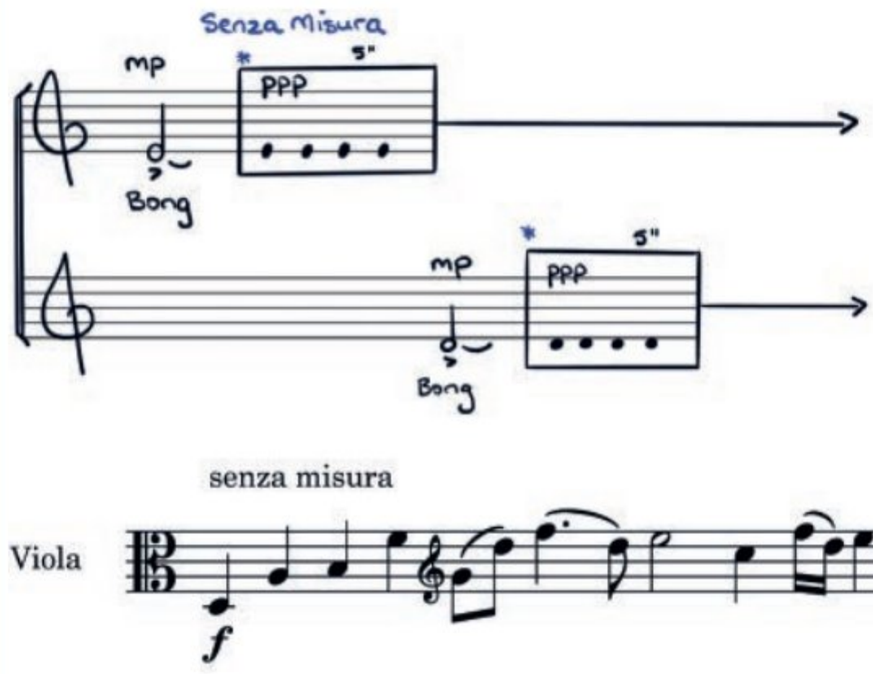
In this activity you have practised skills that are assessed using Criterion C: Thinking creatively and Criterion D: Responding.

EXTENSION

Ensemble performance

We looked at 'Deep Field' by composer Eric Whitacre in an earlier part of this chapter. He has also written a wonderful setting of Hebrew love songs for choir, piano and violin called *Five Hebrew Love Songs*. In the fourth movement there is a part where voices **imitate** bells using a 'musical direction', *senza misura*. This term gives the performer permission to interpret the notes in their own rhythmic time; literally reading it as 'without meter or time'.

If you play flute, viola or other concert-pitched instruments, Gustav Holst (1874–1934) wrote a very similar passage with traditional notation for his 'Lyric Movement' composed in 1933. Again, it gives the performer choice over how to express the opening melody. Listen to both works on the playlist and investigate performing them.



■ **Figure 1.56** Example of 'Éyze Sheleg!' ('What Snow!') with the direction of ***senza misura*** Time in seconds is also given to interpret the notes within the work.

To what extent does music use space / emptiness to communicate?

THINK–PAIR–SHARE

Think about this question in **pairs** or small groups; you can answer it in any way you choose (speaking, chanting, clapping or whispering):

What does it mean to divide a beat? Is it a mathematical term? Or a musical instruction? Or both?

Within your group, think of a way that you can **demonstrate** together what it means to *divide the beat*. Once you have discussed different answers, watch the TEDx video 'Rhythm Effect' at **https://youtu.be/nOwpS7iKV90** and see whether you need to *add to* or *change* your answer. Turn to your partner and **share** your answers to the question: How did the performances demonstrate dividing the beat?

DRUMMING IN SEQUENCE

When drumming, it is always best to use your body and voice to internalise the beat. The beat or pulse can be felt in groups of 2 or 3 as discussed, and repetition is always important. It is through repetition that we build patterns, rhythmic memory and the ability to improvise.



■ **Figure 1.57**

ACTIVITY: Complementary layers game

■ ATL

■ Transfer skills: Combining knowledge, understanding and skills to create products or solutions

As a large group, move chairs and tables out of the way so you can either stand or sit facing one another. The aim of the game is to play rhythms that 'fit' with each other, just like a jigsaw puzzle. The leader begins, clapping a simple pattern in 4, then the second person must join in with a completely different rhythm – avoiding the pattern of the first person. This continues for the third person, the fourth, and so on. The more people that join the game means that the rhythmic 'spaces' will fill up very quickly. This is where you can be creative with sound effects.

What you will notice is that repeated ideas can complement or 'lock into' each other, **creating** amazing rhythmic soundscapes.

Some points to remember while playing:

1. **You will want to remain in the game as long as possible, performing like a human loop machine.**
2. **You cannot perform the same pattern as someone else. You have to fit either inside or outside someone else's space.**
3. **If you play the same rhythmic pattern as someone else, you are disqualified.**
4. **Simplicity is key, and make it fun! Beatbox, whistle, clap, stomp and sing.**
5. **Ensure someone is recording the game, because you will make up some incredible rhythms.**

"Space is an instrument"

Producer Focus quoting Dr. Dre

◆ Assessment opportunities

In this activity you have practised skills that are assessed using Criterion B: Developing skills.

ACTIVITY: Let's drum

ATL

- Communication skills: Using intercultural understanding to communicate ideas

In this activity we are going to experiment with some drumming grooves in the style of Japanese *Taiko*. We will seek to understand how they work as **complementary** layers by learning each rhythm vocally and then playing them in three different ways. In Japanese, the word *renshu* means 'practise': **Using** the examples in Figure 1.58, practise the different combinations. Thanks to **https://taikosource.com**, we have a way of vocalising and writing taiko-styled rhythms.

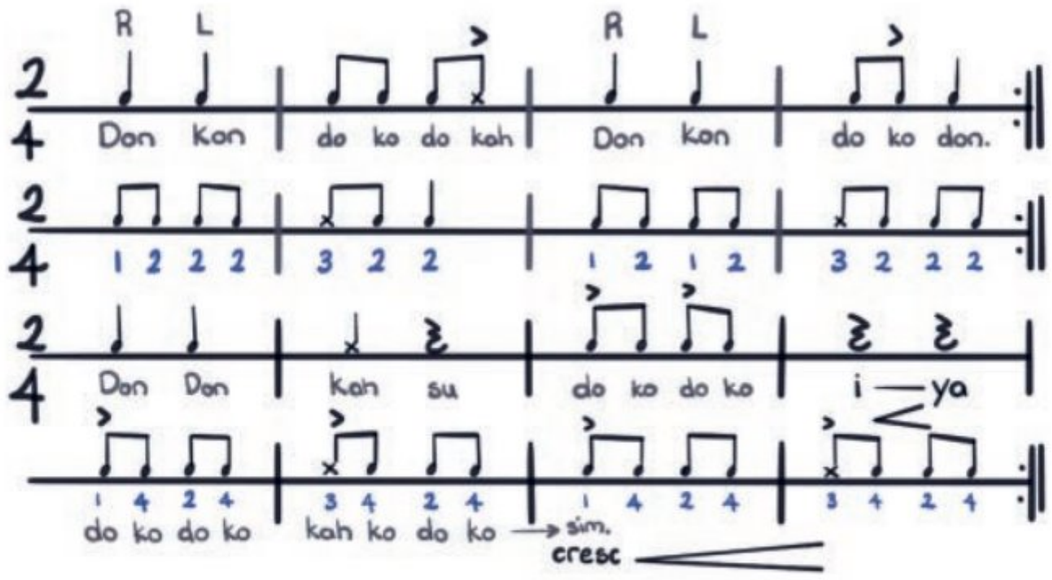


Figure 1.58 Patterns for rhythmic experiments

Experiment part 1: Chanting

Rhythms in taiko can be learnt by using *vocables*. Use the table below to practise the examples in 2/4.

Vocables	Beats	Rests	Vocables
Don, Kon Do-Ko (hit in center of drum)	♩ ♫	𝄽𝄽	i-ya
Kah Ka-rah (hit on rim of drum)	♩ ♫	𝄽	Su (can be shorter than Don)
Tsu Tsu-ku (hit in centre of drum)	Same as above but quieter hits / strokes	𝄽	Hup
The bouncing rhythm that gets lighter is called *katarai*.			

Experiment part 2: Pen drumming

Pen drumming is an amazing skill that you can **develop** right now using cipher notation and by watching YouTube: **https://youtu.be/pllrQAcsZqc**. Once you have practised your pen skills, try applying them to the rhythmic patterns in Figure 1.58. The numbers for each note are explained below.

Numbers	Beats	Pen hold
1	♩, ♪	Palm on table
2	♩, ♪	Tip of right-hand pen
3	♩, ♪	Right-hand open flat
4	♩, ♪	Tip of left-hand pen

Experiment part 3: Sticking

This is where you get to use drumsticks! Any pair of drumsticks will do, and if you have gone through the two levels explained you now have a good idea of how the rhythms work. Experiment with alternating your hands from right to left and speeding up or slowing down the tempo. Everyone in your group must perform their part at the same time, with vocal yells!

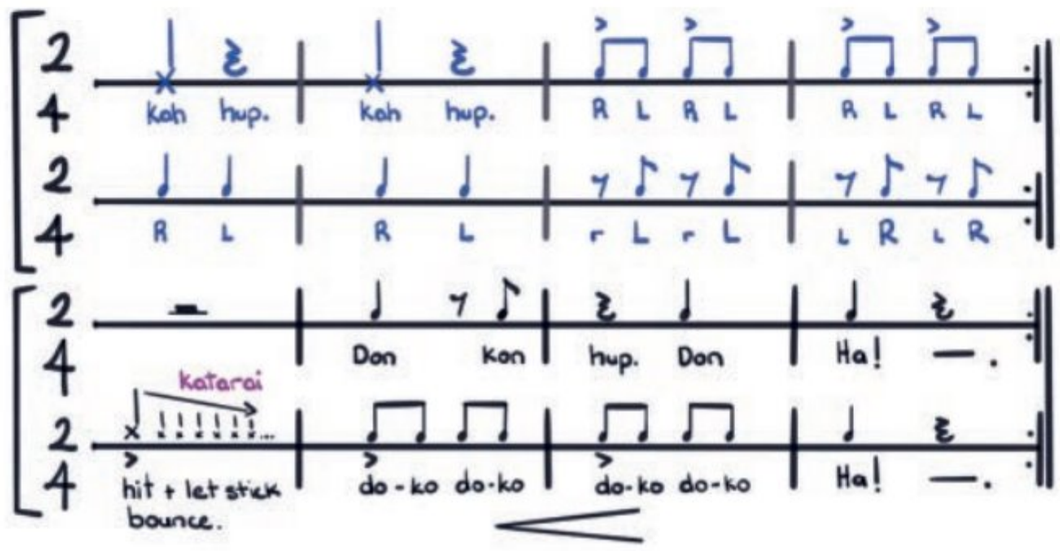


Figure 1.59 Duet renshu-style patterns that you can build on

This activity is an example of using inspiration provided by another culture to transfer and develop your rhythm skills. Add your thoughts on this process to your portfolio.

Assessment opportunities

In this activity you have practised skills that are assessed using Criterion A: Knowing and understanding and Criterion B: Developing skills.

How does music represent a form of communication?

Reflection

In this chapter, we have **explored** many different aspects of rhythm and *explained* how they fit together in complementary patterns. We have **evaluated** performances and works, **outlining** their structures and *discussing* how they were **created** by taking apart their key components.

As the chapter sought to connect music, mathematics and coding, the premise of music being a language with its own unique rules and symbols was **demonstrated** by *examining* how other composers and performers have approached their art in innovative ways, from codes, ciphers, shapes and colours to phrases, words and dots.

We have analysed aspects of music that compare it to mathematics and coding, seeking to *define* the terms and devices used in cultures all over the world. Ultimately, we have *applied* what we have learned in active and immersive tasks.

SOME SUMMATIVE OPTIONS TO TRY

Use these ideas to apply and extend your learning from this chapter. These problems can be assessed using any of the strands suggested above the summative activities. The presentation and portfolio requirements are given after the description.

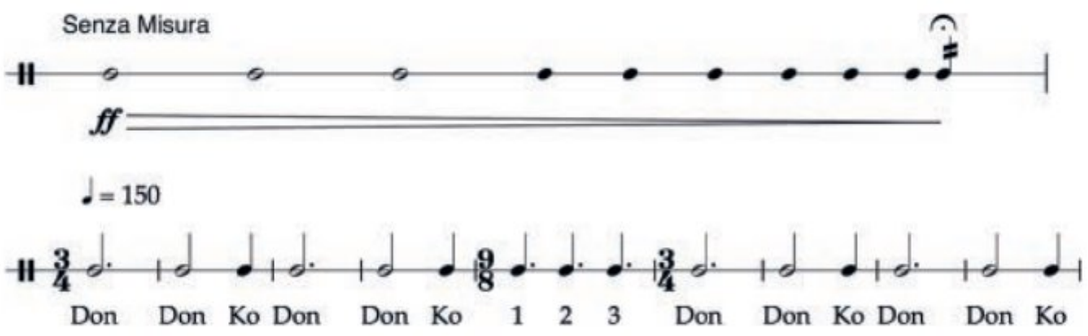
THIS TASK CAN BE USED TO EVALUATE YOUR LEARNING IN CRITERION A AND CRITERION C (ALL STRANDS).

SUMMATIVE 1

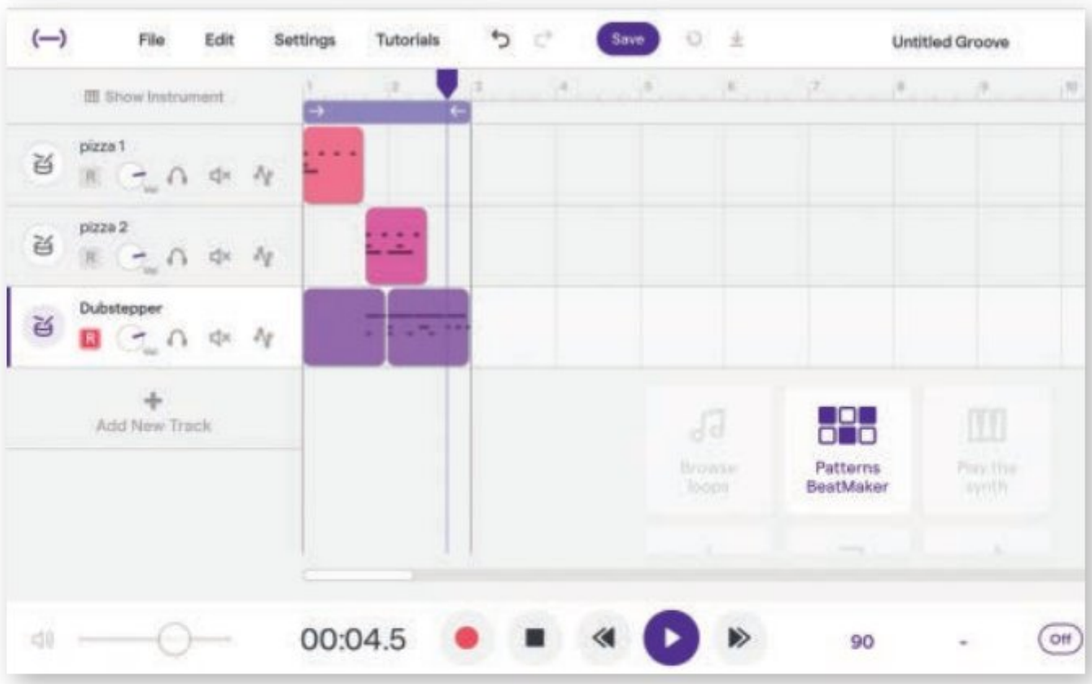
Create a drumming experience that **uses** mathematical number patterns for an ensemble of your choice (including pen drumming or taiko). You can start with pi / (π), Fibonacci, Pythagoras or any other number set that you investigate. The goal is to include four people playing a series of layered rhythms in a binary A+B structure.

Presentation and portfolio

Research your mathematical number set and **develop** a page of planning where you sketch out different ways of **using** those numbers for **a** measures or time signatures **b** combinations of patterns **c** groupings of two and three **d** clicks, hits, yells or shouts. Once you have your sketches and a roadmap outlining the order of your work, either record each part into GarageBand / SoundTrap or notate it so you can share the parts with your friends. **Present** the final piece as a live performance or video.



■ **Figure 1.60** Student drumming using *senza misura*



■ **Figure 1.61** SoundTrap rhythmic layers ready for editing

THIS TASK CAN BE USED TO EVALUATE YOUR LEARNING IN CRITERION B AND CRITERION D (ALL STRANDS).

SUMMATIVE 2

Develop an ensemble performance that includes the instruments of your choosing, *plus* coded loops that change after certain amounts of time. You can **use** GarageBand, a BBC micro:bit, Sonic Pi or number patterns entered into SoundTrap. You need to have at least one layer that is acoustic. Some professional setups have a keyboard with a laptop or tablet. Your goal is to generate music using coding, and to control it all yourself in a live setting.

Presentation and portfolio

Draw a diagram or roadmap showing your setup with instruments, which patterns the loops are based on, and your coding materials. Include in this diagram how everything should be set up on a stage, how the coding loops will function and how you will perform any live components. **Present** the final performance and video it for peer reflection.



■ **Figure 1.62** Setup example of tablet, diatonic bells and piano with looped chords

Portfolio presentation

Documenting and sharing

Keeping in line with all your activities and explorations, listen to pieces that include Latin rhythms so you can practise identifying *claves* – patterns of 2 against 3. Keep building your coding skills and using musical software to generate new and experimental works.

Use this table to reflect on your own learning in this chapter.						
Questions we asked		Answers we found		Any further questions now?		
Factual: What are some of the ways sound is used to communicate? What is the difference between traditional and graphic notation?						
Conceptual: How does music represent a form of communication? What are some of the ways mathematics has influenced music? How does a repetitive structure relate to music, mathematics and coding? How can we use patterns and sequences to create music?						
Debatable: Do music and mathematics share the same rules as code? Is music a language? To what extent does music use space / emptiness to communicate?						
Approaches to learning you used in this chapter:	Description – what new skills did you learn?	How well did you master the skills?				
		Novice	Learner	Practitioner	Expert	
Communication skills						
Information literacy skills						
Creative thinking skills						
Media literacy skills						
Transfer skills						
Learner profile attribute	Reflect on the importance of communication for our learning in this chapter.					
Communicators						

2 Does music have a story to tell?

Identifying the **cultural** context or features of a **narrative** helps us interpret and experience the stories of others.



Figure 2.1

CONSIDER THESE QUESTIONS:

Factual: What is a story with music called? What is a folk song? Who were the Russian Five? What is strophic form?

Conceptual: How can a story be told through music? Which musical ingredients are needed to narrate a story? How is a musical story constructed? How does music represent people, places or things? How does an artist shape an expression of sound from an image or words?

Debatable: Are all stories simply versions of archetypal myths? Is there an expressive 'fingerprint' of sound that identifies cultures around the world? To what extent does music change or improve a narrative?

Now **share and compare** your thoughts and ideas with your partner, or with the whole class.

IN THIS CHAPTER, WE WILL…

- **Find out** how melody, rhythm and harmony can be used to interpret stories or images.
- **Explore** the features of musical cultures, both local and global, to identify the fingerprints of their different styles.
- **Take action** to apply knowledge of musical devices to narrate stories with or without words, using traditional and contemporary techniques to convey meaning.

These Approaches to Learning (ATL) skills will be useful…

- Communication skills
- Information literacy skills
- Creative thinking skills
- Transfer skills

Assessment opportunities in this chapter:

- Criterion A: Knowing and understanding
- Criterion B: Developing skills
- Criterion C: Thinking creatively
- Criterion D: Responding

We will reflect on this learner profile attribute…

- Knowledgeable: We develop and use conceptual understanding, exploring knowledge across a range of disciplines. We engage with issues and ideas that have local and global significance.

KEY WORDS

interval	stanza	motivic development
form	ostinato	programmatic
strophic	symphonic poem	
leitmotif	diatonic	
major	minor	

Prior knowledge

This chapter works on the premise of including all levels of learners. You will find it useful to know:

- how to identify scales and / or forms of notation such as arpeggios or bass lines
- how to notate or recognise groups of rhythms aurally
- how to work collaboratively to express musical ideas with body percussion, voice or instruments
- what working within an ensemble means for balance and intonation
- ways of describing music using pitch, duration, texture, structure, tone-colour, dynamics and expressive techniques
- how to perform different styles of music and about patterns and sequences.

Examples, links and referenced materials will guide you further.

WHAT MAKES YOU SAY THAT?

When Pyotr Ilyich Tchaikovsky wrote his *Symphony No. 4 in F minor, op. 36*, he communicated through his letters that:

> *"The Introduction is the germ, the leading idea of the whole work. This is Fate, that inevitable force which checks our aspirations towards happiness…"*

Listen to the first **movement** on the playlist and you will notice that the repetition of the **rhythm** and **pitch** conveys this message through the orchestra's performance. But would you have thought this had you not read it was the composer's intention?
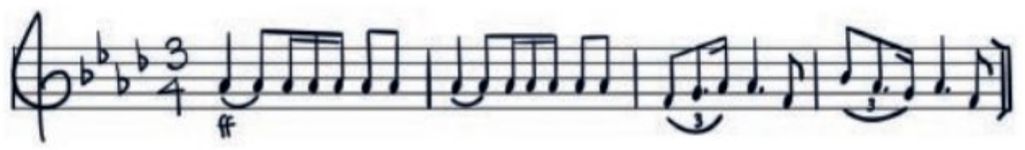


Figure 2.2 Tchaikovsky's *Fate* motif or theme

Then in the fourth movement, a traditional Russian folksong called 'Beriozka' ('Birch-Tree') is used. **Using** the notation below, sing and perform this melody in your classroom. From the shape of the melody and its sound, what do you think the song is about? Discuss this with a partner and give musical reasons for your ideas.
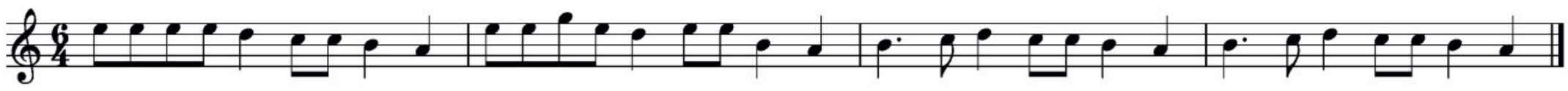


Figure 2.3 'Beriozka' traditional Russian

What is a story with music called?

ACTIVITY: Lament for King Richard

ATL

- Creative thinking skills: Generating novel ideas and considering new perspectives

We all love a good story of heroes, villains, adventures or magic, just the thrill of a tale told expressively captures our imagination. Whether a story tells of love and loss (such as the Greek myth of Orpheus rescuing Eurydice in Monteverdi's *L'Orfeo*), life in the village through a folktune or the triumphs of a hero on the big screen (such as in the score of John Williams' *Indiana Jones*), music conveys a message through its use of pitch, rhythm and harmony that is then interpreted by the listener.

For example, in the famous story of 'Robin Hood', Richard the Lionheart was the king who left on a crusade, thereby starting the heroic journey for Sir Robin as he rebelled against the upstart King John. But did you know, in 1199, the composer Gaucelm Faidit wrote a *lament* for the actual death of King *Richard Coeur-de-Lion* entitled 'Fortz chauza es cue tot lo major dan'. It is a step-wise tune based in D, using repeated notes and small groups of connected 2nd and 3rd **intervals** to convey the sadness felt at the passing of the King.

We interpret the language of this text as emotional because of how it is written and its personal expression. Sing this phrase as a class and discuss how the melody expresses the idea of sadness.

Assessment opportunities

In this activity you have practised skills that are assessed using Criterion A: Knowing and understanding and Criterion B: Developing skills.

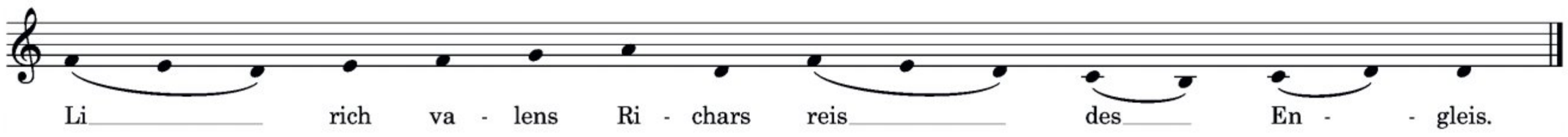


Figure 2.4 Lament for King Richard

Portfolio presentation

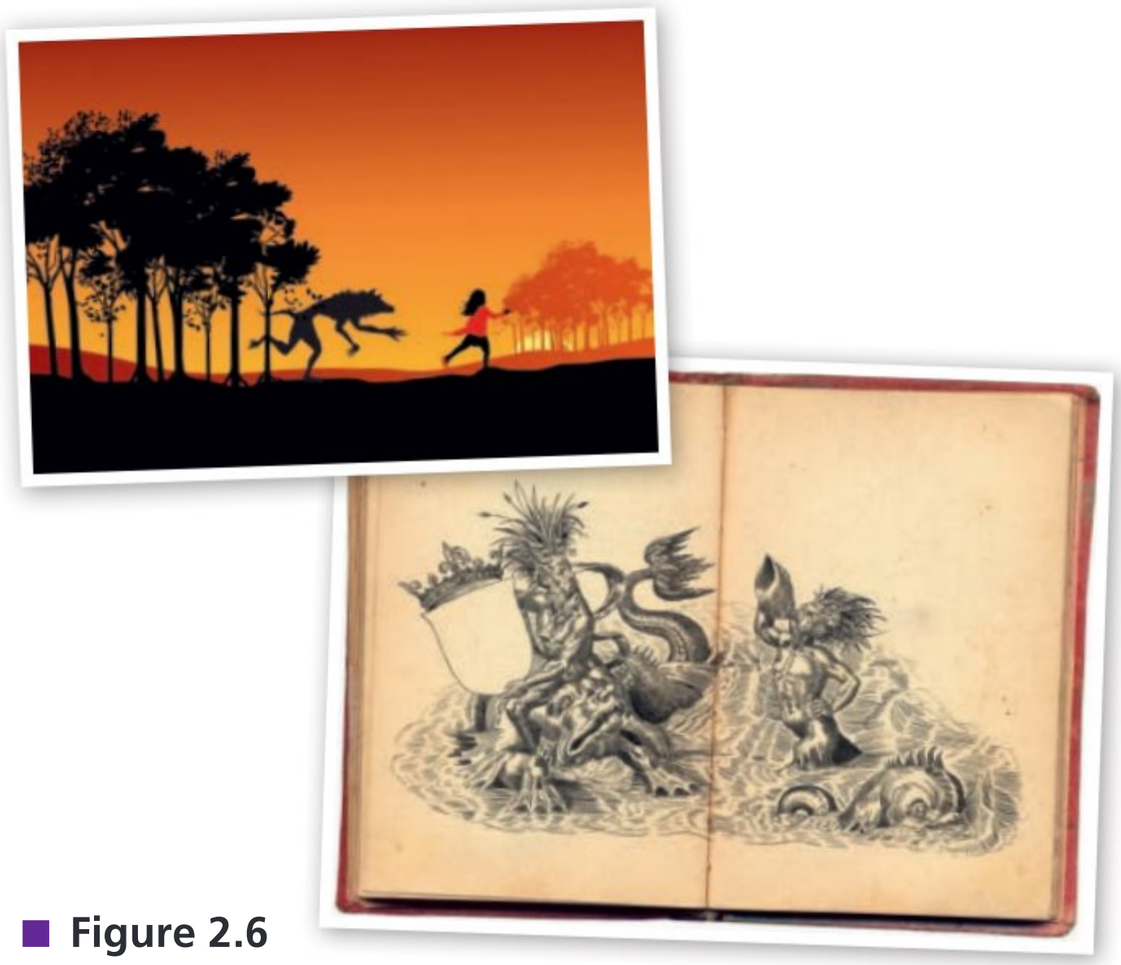
Collecting themes

This is the theme for Antonin Dvorak's *The Water Goblin Op. 107.*

Play it on your instrument and add it to your portfolio for future experiments. Does it sound like a mythical theme to you?
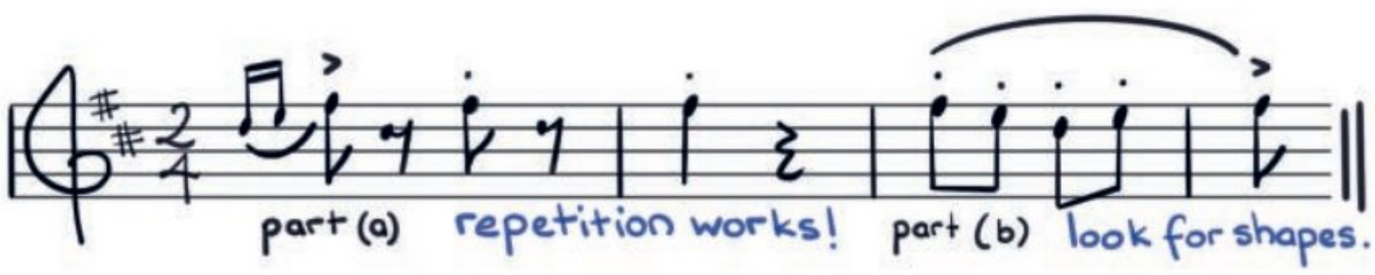


Figure 2.5 Dvorak's Goblin theme
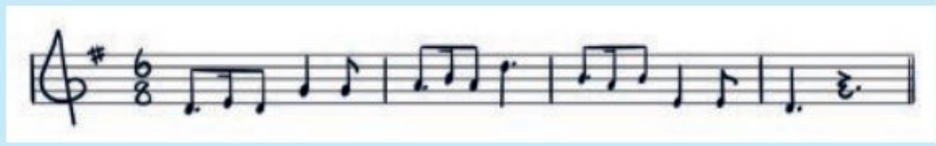


■ **Figure 2.6**

TELLING A STORY THROUGH MUSIC

Whether it is 'Little Red Riding Hood', 'The Jabberwocky' or 'The Fox and the Crow', fables have been transformed time and time again, often with different media and each time adding more detail. When music is added, we tend to interpret the emotion and dramatic associations of the story, poem or painting more holistically. In the 19th Century musical tradition, these were called **tone** or **symphonic poems**. Many composers, from Dvorak to Ravel and later Prokofiev or Strauss, composed for fairytales, fables and legends. We also have what is known as **programmatic music**, which seeks to accomplish the same goals, often with a printed narrative for the audience.

Composer Maurice Ravel wrote a fantasy for children between 1908 and 1911 entitled *Ma mère l'Oye* ('Mother Goose'). This fantasy was actually a **suite** that included five works: **1** 'Pavane of the Sleeping Beauty', **2** 'Tom Thumb', **3** 'Laideronette, Empress of the Pagodas', **4** 'Conversation of Beauty and the Beast' and **5** 'The Fairy Garden', a tale of Ravel's own imagination. Each setting of these has no voice-over-style narration; instead, the listener interprets the tale from the way the music has been written. Ravel has beautifully captured each story, and we will explore ways of doing this ourselves.

MEET THE COMPOSER: BEAR MCCREARY
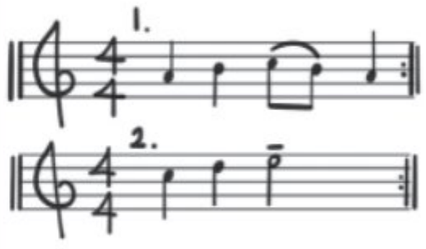


■ **Figure 2.7** '*Skye-Boat Song*' (traditional Scottish)

Based upon the traditional Scottish 'Skye-Boat Song', composer Bear McCreary created several versions of it for the TV series of *Outlander*. The show told the tale of a heroine that is thrown backwards in time. Throughout each incarnation of the story, McCreary uses the setting of the characters to change the arrangement of the tune from Scotland, to the Caribbean to Appalachia. As you listen to each version, identify how he uses both the melody and rhythm to help the audience interpret their surroundings.

EXTENSION

Ensemble performance: Major to minor

Most children sing the folktune 'Brother Jakob' or 'Frère Jacques' in the playground or primary classroom. But have you heard what composer Gustav Mahler did to it? By shifting the entire tune down 3 steps, Mahler takes what was once a major-sounding melody and transforms it into a minor-sounding (and quite eerie) **chant** for his first Symphony. Listen to the work in the playlist and then as a class sing the minor version as a four-part **round**.



■ **Figure 2.8** Minor 'Frère Jacques' parts 1 and 2. Can you work out the rest?

ACTIVITY: Telling a story through layers

ATL

- Creative thinking skills: Creating original works and ideas; using existing works and ideas in new ways

Based on 'Pavane of the Sleeping Beauty'

1 A melody for a princess.

John Williams is a famous film composer of the modern era. In his music, whenever a heroine enters on screen, you are likely to hear a rising minor 6th interval (such as in the case of Princess Padme in the track 'Across the Stars'). But Ravel here uses an arpeggio, centred on something called the Aeolian mode, like Williams. A mode is a type of scale that existed before the major and minor scale system we have today. On your instrument play the melody in Figure 2.9. Then, using the exact same notes, take turns to make up a second phrase 4 measures long.

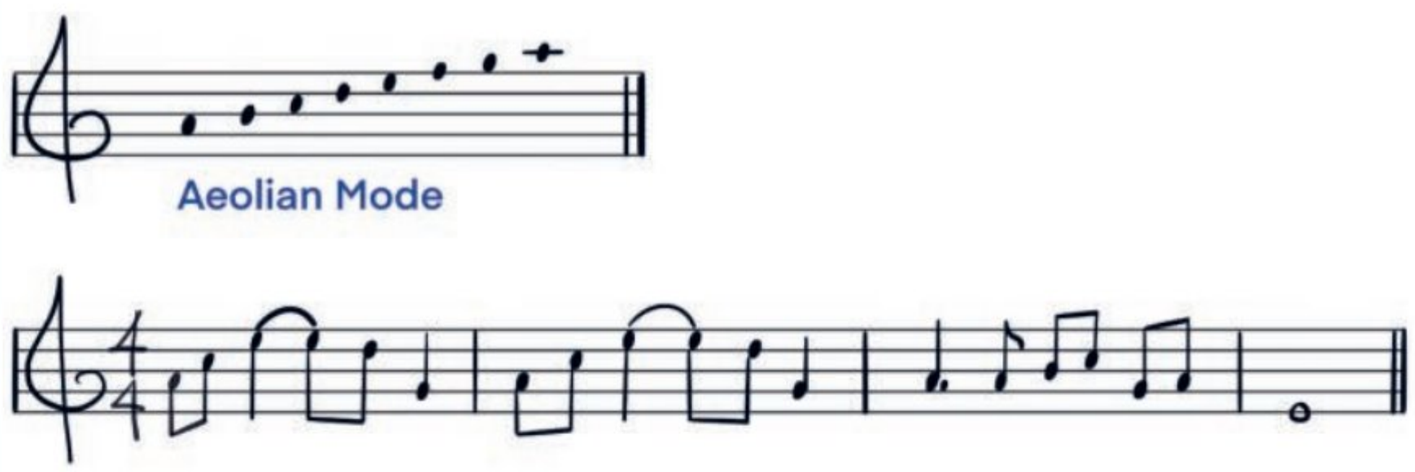


Figure 2.9 Melody from 'Pavane of the Sleeping Beauty'

Based on 'Laideronette, Empress of the Pagodas' and 'Conversation of Beauty and the Beast'

2 Ostinatos for imagery.

An *ostinato* is a repeated pattern that can be rhythmic or melodic, played by the bass or any sound source. Computer games are also storytelling mediums and they make regular use of ostinatos to help support their storylines. Ravel here uses a simple accompaniment ostinato and the pentatonic scale to create the imagery of a Chinese empress. Listen to movement III of 'Empress of the Pagodas' on the playlist and Christopher Larkin's 'Greenpath' from the computer game 'Hollow Knight'. Can you *identify* and describe the ostinatos by drawing their shape in your portfolio?

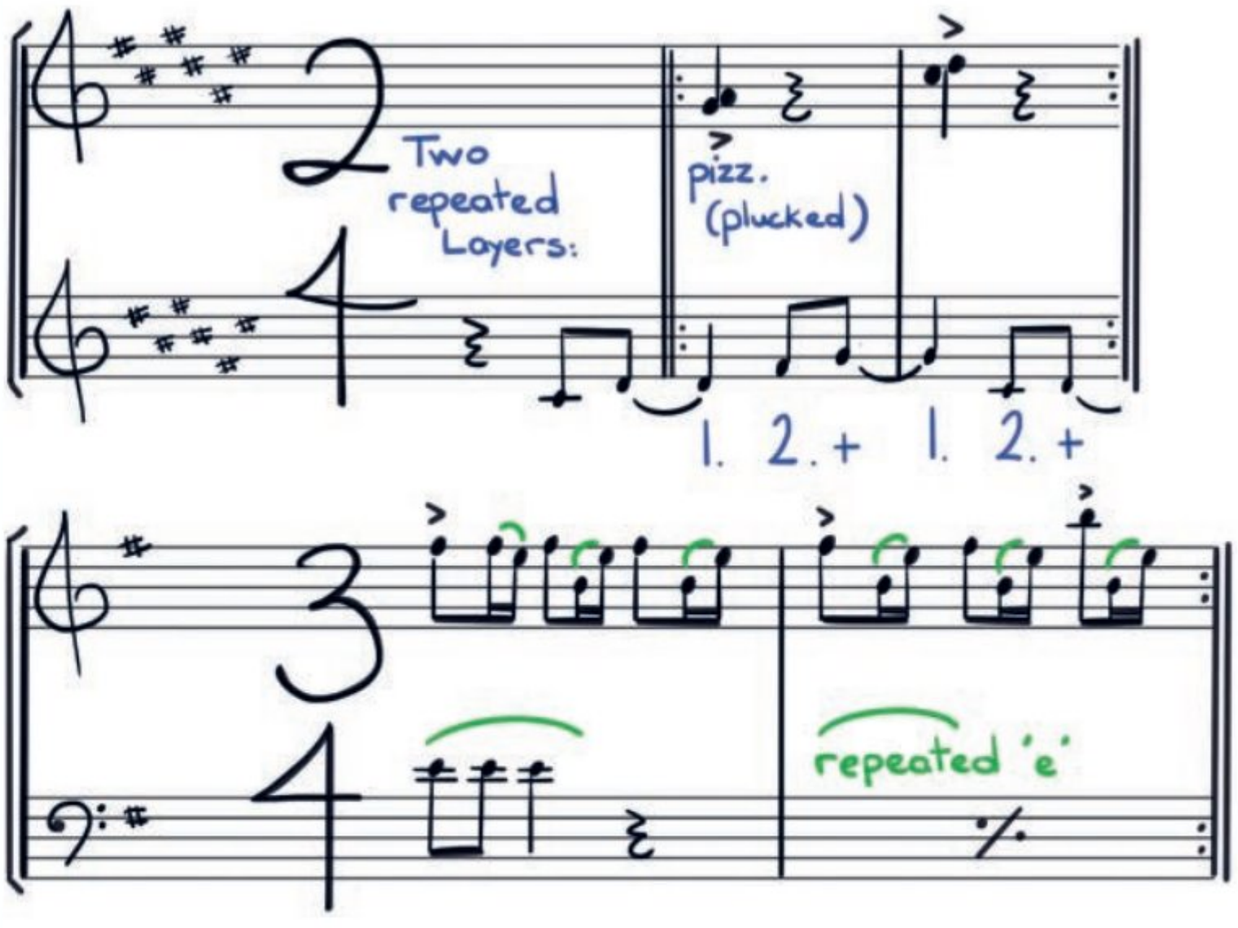


Figure 2.10 `Laideronette, Empress of the Pagodas' in 2/4 and ostinato from `Greenpath' in 3/4



■ **Figure 2.11** 'Conversation of Beauty and the Beast' from *The Mother Goose Suite*

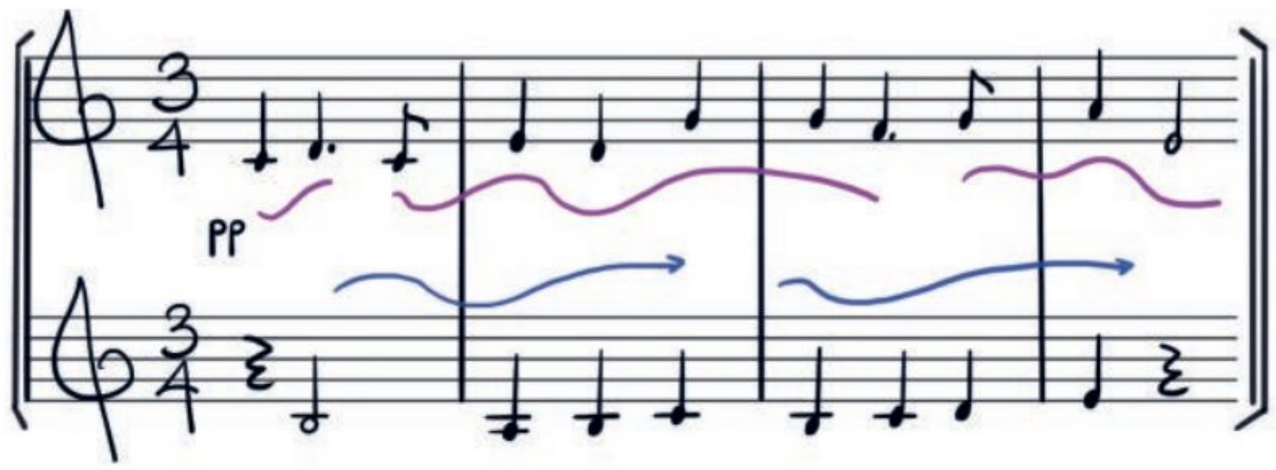
As a comparison, listen to Alan Menken's 'Main Titles' and Ravel's 4th movement 'Conversation of Beauty and the Beast' on the playlist. Can you **identify** their ostinatos or melodies?

Based on 'The Fairy Garden'

3 Listening for motion!

The fifth suite is a perfect example of two lines moving in parallel and contrary motion. To get the feeling of movement, Ravel will have two melody lines move in the same direction (called *parallel motion*) and then cause another to move in the opposite direction (*contrary motion*).

In your portfolio, draw two lines that show the shape of the top part against the bottom part. We call this *motion* in music, and it is very important for storytelling.



■ **Figure 2.12** Opening of 'The Fairy Garden' by Ravel

Using the ideas you have **explored** on this page, use a classroom instrument, or your own, to compose a melody and accompaniment ostinato part to one of Aesop's fables found here: www.gutenberg.org/files/19994/19994-h/19994-h.htm or a folktale from your own culture.

Perform it with a friend and record the creative process in your portfolio.

How effectively does your melody and ostinato 'narrate' your chosen fable without words? Ask listeners if they can identify **a** the melody, **b** the ostinato and **c** the motion in your music.

◆ Assessment opportunities

In this activity you have practised skills that are assessed using Criterion A: Knowing and understanding, Criterion B: Developing skills and Criterion C: Thinking creatively.

What is strophic form?



■ **Figure 2.13** The blues

SEE–THINK–WONDER

Robert Johnson is known as the father of the Delta Blues Singers. His legend of going to the crossroads and selling his soul to play the guitar is a famous one. In the playlist is the track 'Cross Roads Blues' as performed by Johnson. What do you notice about the way he sings and plays the guitar? Can you describe it?

Focus on the lyrics and rhymes that he uses. What do you **see** here? What do you **think** happens as he moves from verse to verse? Does anything repeat?

When a piece of music, such as the blues, repeats the same music with different words each time, this is called **strophic form**. What hypothesis can you make about most other blues songs with this information? What does it make you **wonder**?

Music exploration: Lieder and Lior

A **lieder** is a German song for piano and voice that uses rhythm, melody and harmony to express the beauty of nature, sometimes the supernatural, and of course emotion. In the 19th Century Romantic tradition, *lieder* were often strophic, written in collections based around a concept, such as 'Winterreise' ('Winter Journey', by Schubert) or 'Dichterliebe' ('A Poet's Love', by Schumann). A work such as 'Das Wandern' is a song about a miller happily travelling through the countryside singing of the water, and each verse uses the same melody, making it strophic. However, there is a contemporary performer named Lior Attar who combines this technique, with a refrain in a song entitled 'My Grandfather'.

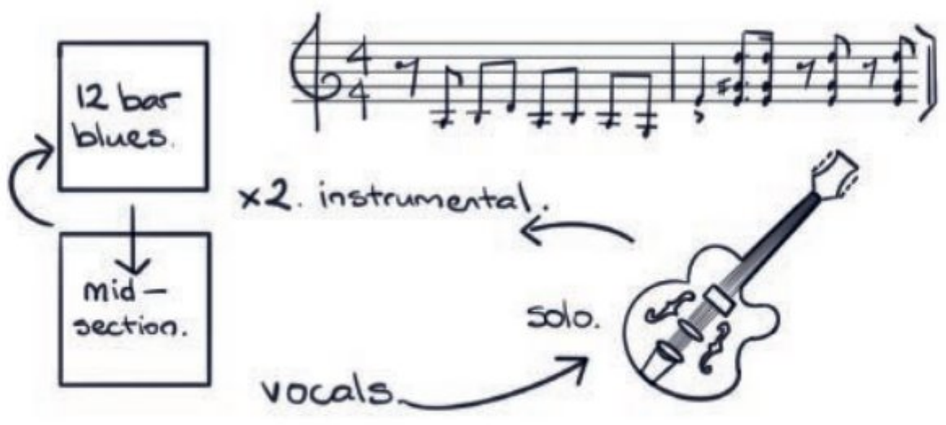
Watch the music video at **https://youtu.be/IgWaG3E3Jv0** or listen to the song on the playlist. How clearly does it narrate the story he is telling? Is there a repeating accompaniment pattern throughout the song?

Listening strategically: Get an IDEA

Listen to the track 'Mary had a little lamb' by Stevie Ray Vaughan. As you listen, what sounds or patterns can you **Identify**? **Describe**? **Explain**? **Analyse**?

As an extension, can you describe how Vaughan structures his blues progression around the children's rhyme? Which phrases are repeated and what does he do in between each line?

(This is *strophic form* within a blues structure. Vaughan also adds his characteristic guitar solos as an in-between section to break up the singing.)



■ **Figure 2.14** Graphic score of 'Mary had a little lamb' with riff

SINGING A STORY

Italian Renaissance composer Claudio Monteverdi wrote one of the world's first operas, *Orfeus L'Euridice* or *L'Orfeo*, in 1607, for a court performance in Mantua. The story is based on the Greek myth of Orpheus, who descends to Hades to rescue his wife Eurydice from death. The beginning of this dramatic story starts with the entrance of La Musica, the 'muse of music', who sings five stanzas / verses introducing the plot and main character. As you listen to it on the playlist, you will first hear an instrumental section called the **ritornello**. Much like the chorus in a pop song, this part keeps returning, in between each stanza.

ACTIVITY: *Orfeus L'Euridice*

ATL

- Communication skills: Making inferences and drawing conclusions

In this activity, we will take the top and bottom lines of the *ritornello* and **identify** the patterns that Monteverdi used to narrate this tragedy.

Notice that the pattern in the bass repeats every two measures, just higher or lower. We learnt in Chapter 1 that this is called a **sequence**. Then in the top part, the first two measures are also repeated, first lower, then at the same pitch (except for the last three measures, where change is introduced). The melodic lines made by Monteverdi also move in contrary then parallel motion almost every two measures.

1 **As a class, or with your own instrument, sing / play the bass line as a loop, then add the melody.**

2 **Using GarageBand, SoundTrap, MuseScore or pencil and paper, improvise your own two-measure phrase on top. Could you find a pattern to repeat that would fit Monteverdi's structure?**

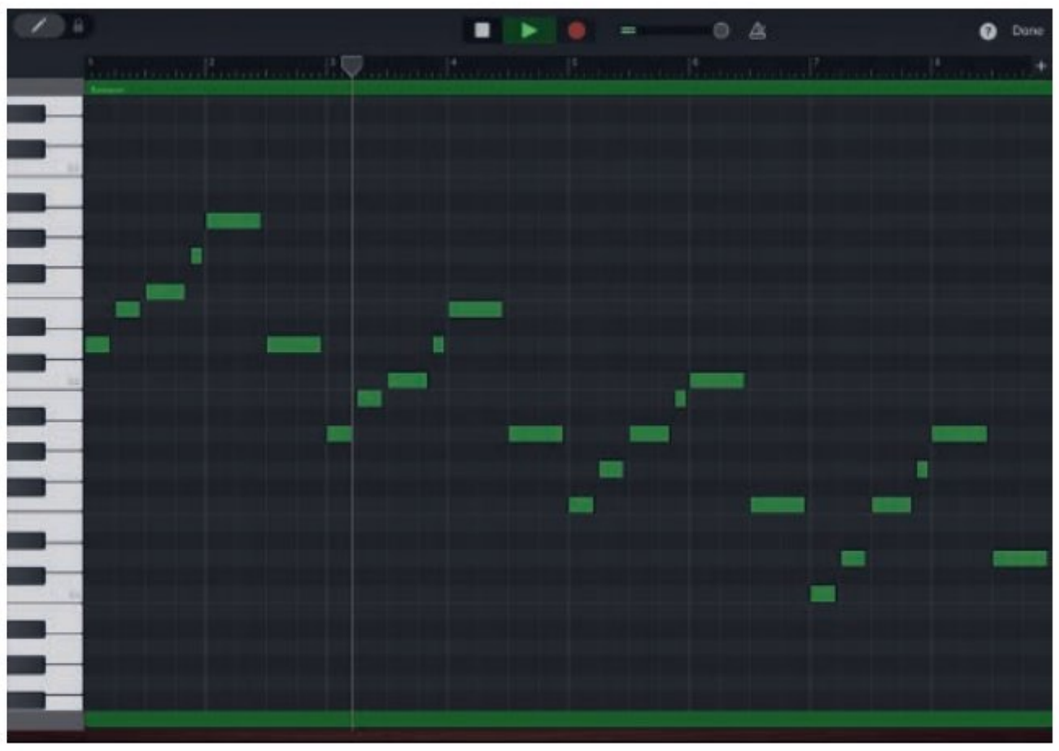


Figure 2.16 Monteverdi's Prologue bass line in GarageBand

Make sure to add your experiments and thoughts to your portfolio.

notice the contrary then parallel motion in each phrase?
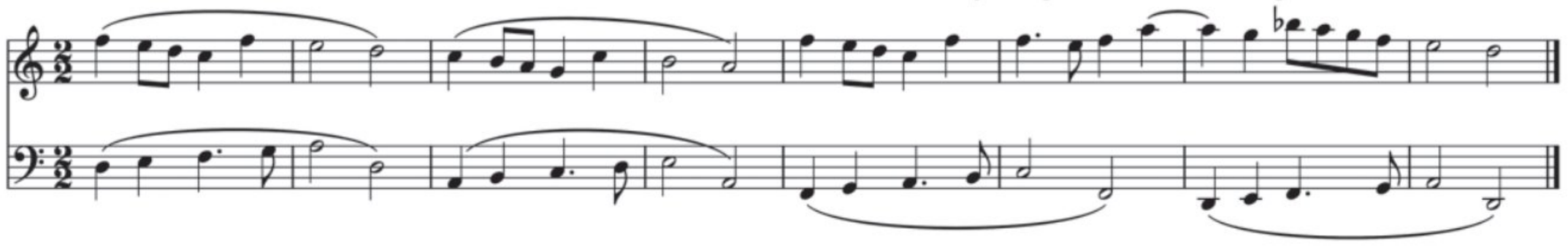


Figure 2.15 Prologue, La Musica

Assessment opportunities

In this activity you have practised skills that are assessed using Criterion A: Knowing and understanding and Criterion B: Developing skills.

Who were the Russian Five?



■ **Figure 2.17**

THINK–PUZZLE–EXPLORE

What is a folksong? In our modern world, the concept of a traditional culture's songs and dances can be lost in the global market. What was once found only in a village can now be recorded, remixed and used in an advertisement.

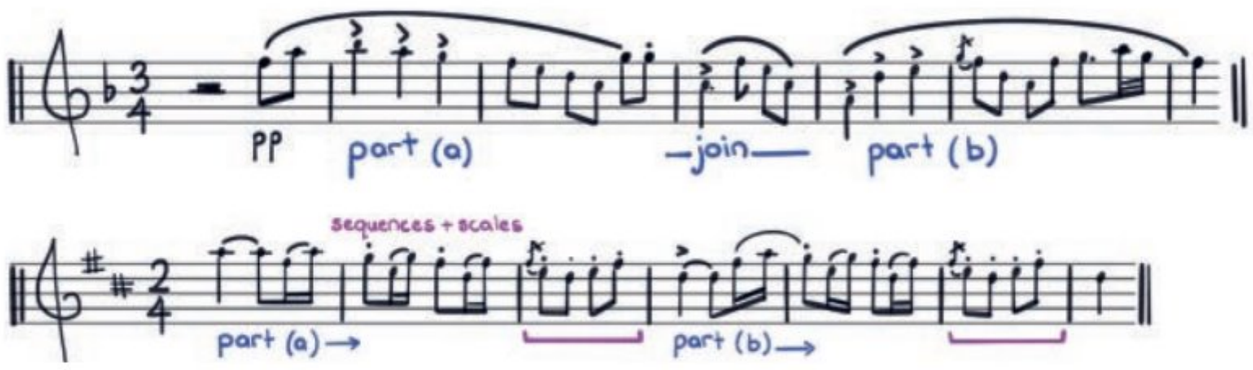
If one song was played to you from Russia, and another from Turkey, America or Scotland, do you **think** you could point out the difference? What identifying features or **fingerprints** would help you solve this **puzzle**?

Listen to the performance of 'Come Love Come' from 4'47 of the video at **www.ted.com/talks/rhiannon_giddens_songs_that_bring_history_to_life**, where artist Rhiannon Giddens explores the narrative of Civil War slave stories. Her manner of expression in each layer of clapping; the blues-infused melody and banjo ostinato; the text that uses a strophic structure and her voice, all powerfully express the painful story she tells.

How would you start **exploring** the fingerprints of cultural songs and their stories?

IDENTIFYING CULTURAL EXPRESSION

In 19th Century Russia, five composers came together with an aim to collect, create and develop a unique Russian *voice*. Mily Balakirev, César Cui, Modest Mussorgsky, Nikolai Rimsky-Korsakov and Alexander Borodin wrote symphonic works, collected folksongs and spoke of creating their own national style. Mikhail Ivanovich Glinka (1804–1857) was already composing works with distinctly Russian folksongs. Glinka's 'Kamarinskaya' (1848) is based on two themes: a slow bridal song, 'Iz-za gor', and, 'A Naigrïsh', repeated throughout the work. As you listen to it on the playlist, you will hear that the melodies never change, only the background accompaniment.



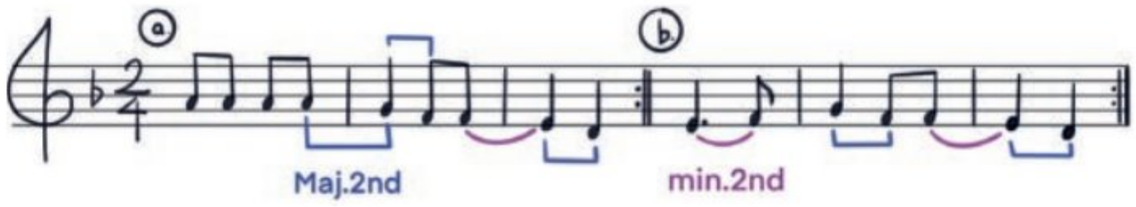
■ **Figure 2.18** Wedding tune 'Iz-za gor' in 3/4, and dance 'A Naigrïsh' in 2/4

Glinka and Balakirev worked together on a piece called 'The Lark' (from *A Farewell to Saint Petersburg*, 1840). Look at the melody in Figure 2.19 and how it is built from two phrases that seem to be a bird-like question and answer.



■ **Figure 2.19** Repeated phrasing patterns in 'The Lark'

There is another Russian folksong that The Russian Five, and Tchaikovsky used in their symphony works, called 'Beriozka'. Here we will analyse its intervals and repeated strophic structure. Can you research its lyrics and meaning?



■ **Figure 2.20** 'Beriozka' folksong made up of major and minor 2nd intervals

ACTIVITY: A folk music fingerprint (part 1)

ATL

- Communication skills: Negotiating ideas and knowledge with peers and teachers

A tune can be a powerful way to **identify** with an emotion, a time in history, or great loss. The folksong 'Katyusha', written by Matvey Blanter in 1938, conveys all of these feelings within a distinct Russian fingerprint. Another such folksong sung in Russia is 'Oi, Moroz, Moroz' (O Frost, Frost) seen in Figure 2.21 and performed here: **https://youtu.be/K2n__T3vPeQ**

Using the rhythms, intervals and patterns discussed so far, let us take apart each folksongs' *A* and *B* sections to see what similarities we can identify. You can do this with 'Katyusha' using the playlist provided.

Remember from Chapter 1 that an *interval* is the distance between two notes. They can be a 2nd, 3rd, 5th or octave (8 notes) apart.

Using our investigation on the fingerprints of folksong, write your own mock 'folksong'!

1. **Intervals: Each melody uses smoothly connected small intervals, with only a few larger ones in the middle or at the end**
2. **Rhythms: Simple, repetitive and remain mostly the same**
3. **Repetition: Used for each phrase or sentence of the music, they repeat every 2 measures**

You can sing them, play them, compare them and even swap them with a friend.

This activity will conclude with an example by a middle-school student who did just this.

Don't forget to add all the information, research and experiments to your portfolio.

Assessment opportunities

In this activity you have practised skills that are assessed using Criterion A: Knowledge and understanding and Criterion C: Thinking creatively.

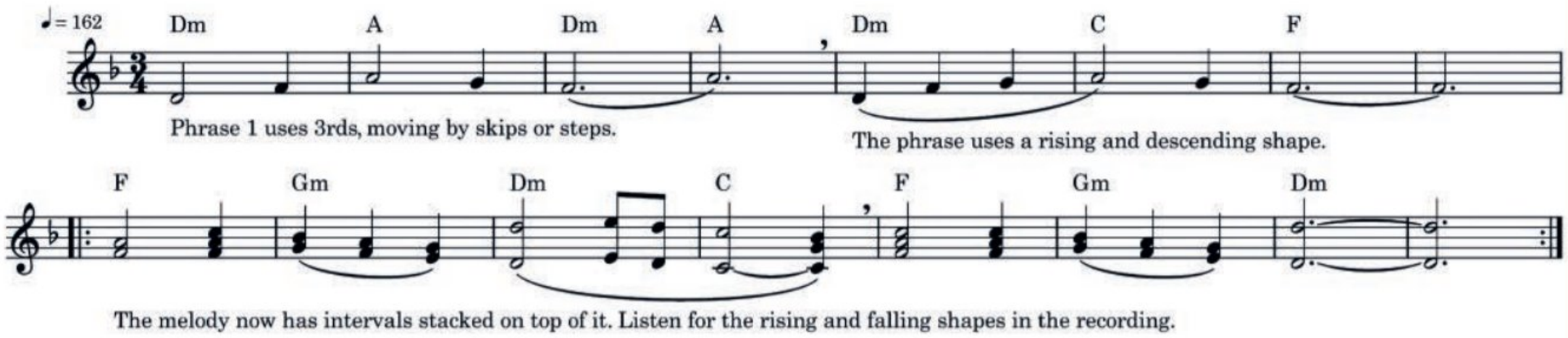


Figure 2.21 Oi Moroz Moroz in two phases



Figure 2.22 Grade 6 student's melody based on the A minor scale, or Aeolian mode

Take action

- Apply knowledge of musical devices in narrating stories, using traditional or contemporary techniques.
- Individually or as a class ensemble, organise a community storytelling event in your local primary school or a local day-care centre. Choose a series of books to compose and perform music to, as they are read to the children. The books at the opening of Chapter 2 are highly recommended.

What is a folk song?



■ **Figure 2.23**

THINK–PAIR–SHARE

What is a *folksong*? **Thinking** about this question is the first step in beginning the process of investigation, when **presented** with a new piece of music. Other questions you could ask are: What is the story behind this music? How am I supposed to interpret it?

Finding these answers requires research and often trying to understand the context of the writer / storyteller. Watch the performance of Albanian artist Elina Duni singing 'Bukuroshe e lales' at **https://youtu.be/Sv9rRjYGlFI**

The lyrics of the song tell the story of '… a beautiful woman and how she looks like a flower. Her face is white and pretty like snow. When she goes out in the garden everyone looks at her'.

Pair with a friend and discuss how the rhythm and melody narrate the story. Is there a pattern or repeated ingredient that she uses? How is the melody sung by the voice? Having **identified** these musical elements, do they narrate the story being told?

Share your discussion with the class.

TRADITIONAL STORYTELLING
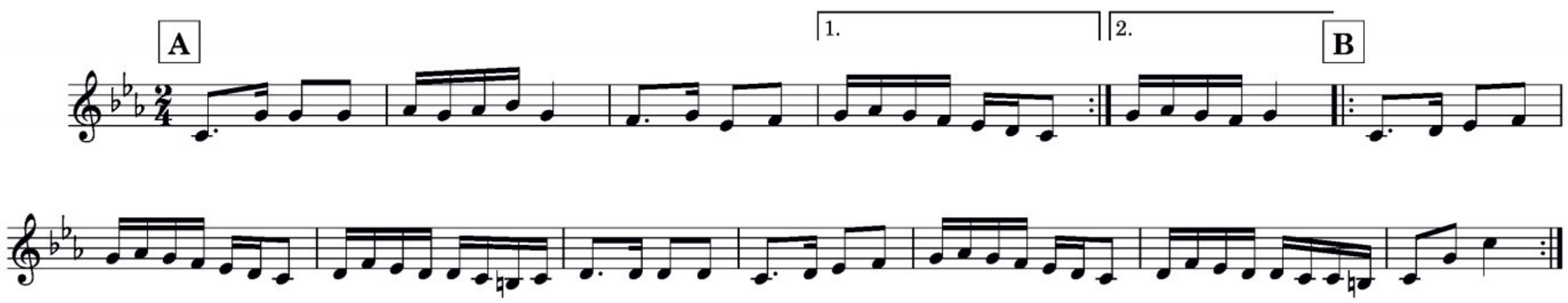
Music exploration: 'Baba Yaga'

The story of 'Baba Yaga' is a terrifying tale of a witch who eats children. In some tales she is tricked into eating her own daughters. The house she lives in has chicken feet and can move around to chase her prey.

Mussorgsky, one of the Russian Five, composed a piano work (later **orchestrated** by composer Ravel) based on a painting by his friend Victor Hartmann called 'The Hut on Fowl's Legs'.

In this work, the notes used start close together in pitch. As the witch gets closer, the intervals expand and the rhythm grows note by note until there is a frenzied theme that sounds as if 'the chase is on!'

Listen to the orchestrated work on the playlist. How effectively does Mussorgsky use pitch and rhythm to pull you into the story?



■ **Figure 2.24** Main tune from 'Üsküdar'a Gideriken' outlined with sections A and B

ACTIVITY: A folk music fingerprint (part 2)

ATL

- Information literacy skills: Making connections between various sources of information

From the Ottoman Empire to today, there have been many incarnations of the song 'Üsküdar'a Gideriken'. Many cultures claim it as 'theirs':
https://store.der.org/whose-is-this-song-p260.aspx

> *"The tune [of this song] emerges again and again in different forms: as a love song, a religious hymn, a revolutionary anthem, and even a military march. The powerful emotions and stubborn nationalism raised by one song seem at times comical and other times, eerily telling."*

By comparing the Russian folktunes we have studied previously, we will apply the same principles of looking for a cultural fingerprint in the music. In your class, with any instrument, perform the tune in Figure 2.24, looking at the intervals and rhythmic patterns. Can you find any similarities to the folksongs from Russia? What is different?

The tune is based around a *Maqam*, or melodic mode, found in Turkish traditional music. *Maqam Nahawand* is notated in Figure 2.25 with a rhythmic cycle called *Nimsofyan*. These cycles, or *Usuls*, are the rhythmic equivalent of a mode.

Once you have performed the tune below, comment in your portfolio how the scale below is repeated within the song. How many repetitions of the scale can you find?
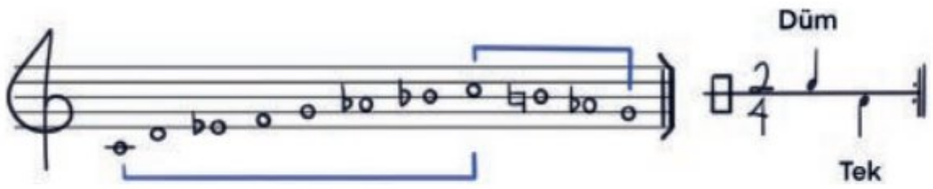


Figure 2.25 *Maqam Nahawand* with *Usul Nimsofyan*

What is the story about?

The lyrics give the impression of a love song:

> *"On the way to Üsküdar, it started raining. My scribe wears a long coat, its long skirt muddied. He has just woken from sleep: his eyes are languid. The scribe is mine; I am his; hands will intertwine. It looks so lovely on my scribe, that starched shirt of his."*

Whereas these are not the lyrics we would sing to a loved one today, the Turkish melody includes some characteristic patterns that ascend and fall to paint a picture of joy, in particular the vocal technique of **melisma**, where a vocalist sings more than one note to one syllable. These are some of the fingerprints of Turkish music that you should add to your portfolio.

Rhythmic cycle task

1 **Turkish Usuls can be very fun to chant and play. What you will quickly find is that there are common time-signature versions, and then unusual ones for cycles of 7, 9, 11 or 15.**
Research Turkish Usuls and create a tutorial to teach one rhythmic cycle to your class. Include notation and the vocal sounds of 'doum' and 'tek.' End your presentation with a recording that you think demonstrates the Usul in context.

Maqam improvisation task

2 **A Maqam provides the basis for melodic improvisation and song writing.**
On your instrument, pair up with a friend to improvise and create your own tune using Maqam Nahawand. Start with one person creating a two-measure 'question', and then the partner creating an 'answer'.

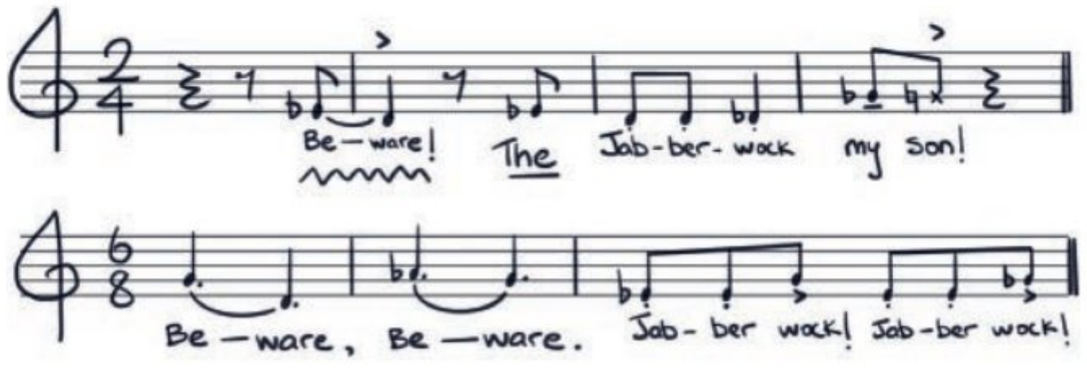
Document your experiments in notation or video. You now have some musical fingerprints for Turkish music.

Assessment opportunities

In this activity you have practised skills that are assessed using Criterion A: Knowing and understanding and Criterion B: Developing skills.

To what extent does music change or improve a narrative?

MUSIC FROM PICTURES AND POEMS



■ **Figure 2.27** Creative student examples of improvising melodic fragments to a poem

ACTIVITY: Jabberwocky

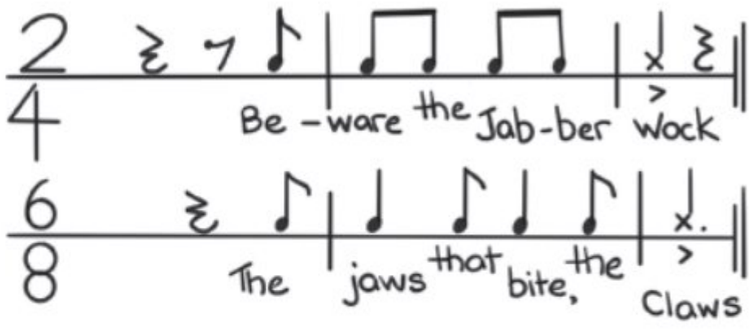
ATL

- Communication skills: Using a variety of speaking techniques to communicate with a variety of audiences

'Jabberwocky' is a poem by Lewis Carroll in which he uses a series of nonsense made-up words to express a fictional creature. This seems to be a terrifying creature, surrounded by other bizarre animals and one lone 'son' with a sword drawn ready.

Using an excerpt from the poem, which both starts and ends with the same verse, we will **create** a series of rhythmic responses to perform with our bodies or instruments.

"Beware the Jabberwock, my son!
The jaws that bite, the claws that catch!
Beware the Jubjub bird, and shun
The fruminous Bandersnatch!"



■ **Figure 2.26** Jabberwocky chanted in different time signatures

1. **In small groups, rehearse chanting the four lines, taking turns to add different accents or stresses to words.**
2. **Choose a pulse in 2/4, 3/4 or 6/8 to play as quavers (8th notes) while chanting the text. Which time signature fits best for your group?**
3. **Write out the words in your portfolio, and choose a set of 4–5 notes that are close by step to each other to attach to the syllables of the poem (for example E♭, D, D♭, G♭, G).**
4. **Now experiment playing, singing, notating or recording your notes to the syllables of the poem's words, as shown in Figure 2.26.**

You have just **identified** both rhythmic and melodic elements within a poem. If an audience were to hear your performance, would they hear the Jabberwocky?

As a final step, perform your group's theme with chanting and clapping of the pulse. Then invite others to perform the melodic **fragments** on their instruments. There is an electronic version on the playlist that may also give you more inventive ideas. You can also watch 'Jabberwock' for combined concert and stage bands, by Dr James Humberstone (2004) at **https://vimeo.com/56888354**

Assessment opportunities

In this activity you have practised skills that are assessed using Criterion C: Thinking creatively and Criterion D: Responding.

ACTIVITY: Remixing *Peter and the Wolf*

ATL

- Communication skills: Using and interpreting a range of discipline-specific terms and symbols

Peter and the Wolf Op. 67 was composed in 1936 as a *symphonic poem*. A symphonic poem is an orchestral composition inspired by a literary or pictorial subject, providing the listener with a theme for each character of the story. Sergei Prokofiev (1891–1953) connected certain instruments and playing techniques to his characters (the boy Peter, the bird, the wolf), almost like a modern-day film composer. Whenever the plot featured one of his characters, the music tells you they are present and interacting with each other, as in Figure 2.28.

In this activity we will alter characters from 'good' to 'bad', using two approaches. Try these in MuseScore or with your instrument(s):

1. **By altering the notes a step higher or lower, we change the overall shape of a melody. Copy Figure 2.30 into MuseScore and alter the notes slightly as seen in Figure 2.29.**
2. **Try altering the intervals from major to minor at the start of each measure. These intervals are 3rds, and bringing them down a half-step creates a darker sound (see Figure 2.30).**

Repeat this process with the 'Wolf' theme. Can you make the wolf sound like a hero? Instead of notes close together, try to give this animal intervals of 4ths, 5ths or octaves (see Figure 2.31).

Assessment opportunities

In this activity you have practised skills that are assessed using Criterion A: Knowing and understanding and Criterion B: Developing skills.
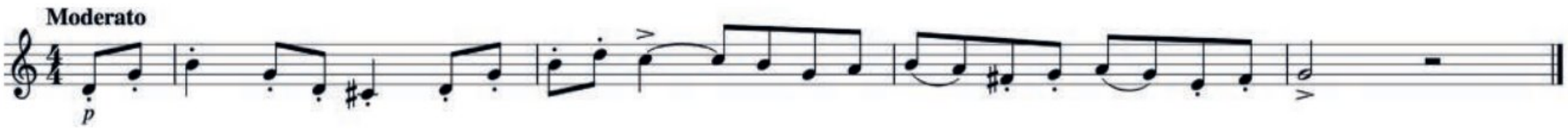


Figure 2.28 The 'Cat' theme from *Peter and the Wolf* (approx. 2'16 on the playlist)



Figure 2.29 The 'Cat' theme with variations part 1 – intervals moved
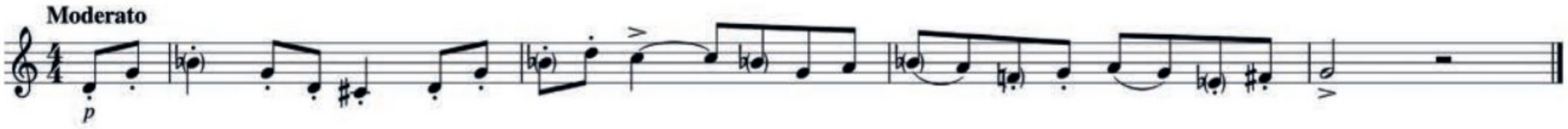


Figure 2.30 The 'Cat' theme with variations part 2 – bracketed notes edited
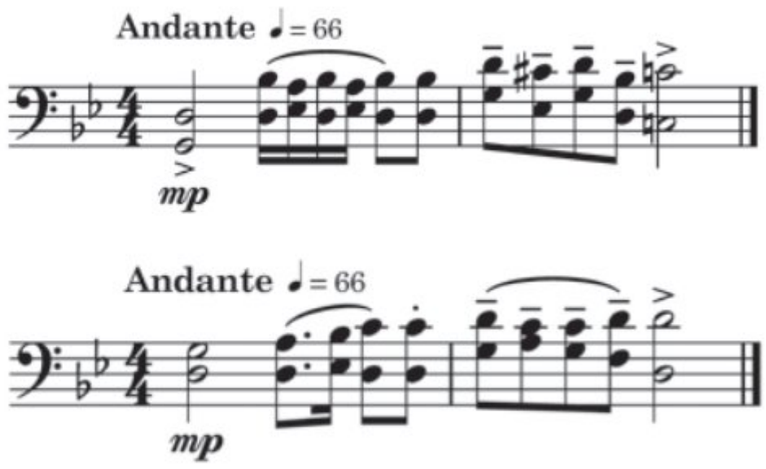


Figure 2.31 The 'Wolf' as Prokofiev intended, then a hero

THINK–PUZZLE–EXPLORE

All around us are images or words. It is our daily job to decipher their meaning, involving our imaginations to understand the story (or information) being expressed. Visit the website of cartoonist, writer, painter, philosopher and poet Michael Leunig at **www.leunig.com.au/works/recent-cartoons/960-storm-in-a-tea-cup** as we start to explore the shape of images and words.

1. **What does the expression 'a storm in a tea cup' refer to?**
2. **What do you think is the intent or narrative of the image?**
3. **What do you think is the interpretation of the poem here?**

What **puzzles** you about the twist that has been placed on the language expression 'a storm in a tea cup'? How could you **explore** this idea further? Or how would you express this musically?



■ **Figure 2.32** 'Storm in a tea cup' by Michael Leunig

Listening strategically: Get an IDEA

Composer Paul Stanhope has written a beautiful work that includes themes from *Peter and the Wolf* and is also based on poems by Michael Leunig. Listen to all three movements within the playlist, make a series of **analysis** sketches in your portfolio and **identify** how composer Stanhope uses pitch and rhythm to narrate his interpretation of 'The Missile' and other Leunig poems at **www.leunig.com.au/works/poems**). You can also purchase the score to perform as an ensemble with a choir. Use the *Songs of Innocence and Joy* sample score to identify fingerprints of each movement: **www.australianmusiccentre.com.au/product/songs-of-innocence-and-joy-for-ssa-treble-choir-chamber-orchestra-piano-reduction**

Listening strategically: Get an IDEA

Based on the novella by French writer and aviator Antoine de Saint-Exupéry, *The Little Prince* was first published in 1943, and then made into an animated film in 2005 with music by Hans Zimmer, Richard Harvey and artist Camille. Listen to the track on the playlist entitled 'Equation' and use the prompts below to **analyse** it. You are looking to **identify** all the layers that Zimmer and Camille combine to communicate *time* and *life as a child*.

1. **Piano and 'ticking' introduction rhythms:** Does the rhythmic or pitch material have a distinct pattern?
2. **Use of rests or phrases:** Does the rhythmic or pitch material use different or repeated patterns?
3. **Repetition of other patterns:** What else is added and layered in this track?

Remember to use the acronym **IDEA** when answering these questions.

How does music represent people, places or things?

THE MUSICAL INGREDIENTS OF STORYTELLING (PART 1)

Pitch in storytelling, and developing ideas that remain as interesting as when they are first played, is very important. From Western music to Arabic folksong and deep house, the hook or melody needs to keep the listener engaged. To do this, musicians manipulate something called the **pitch material**.

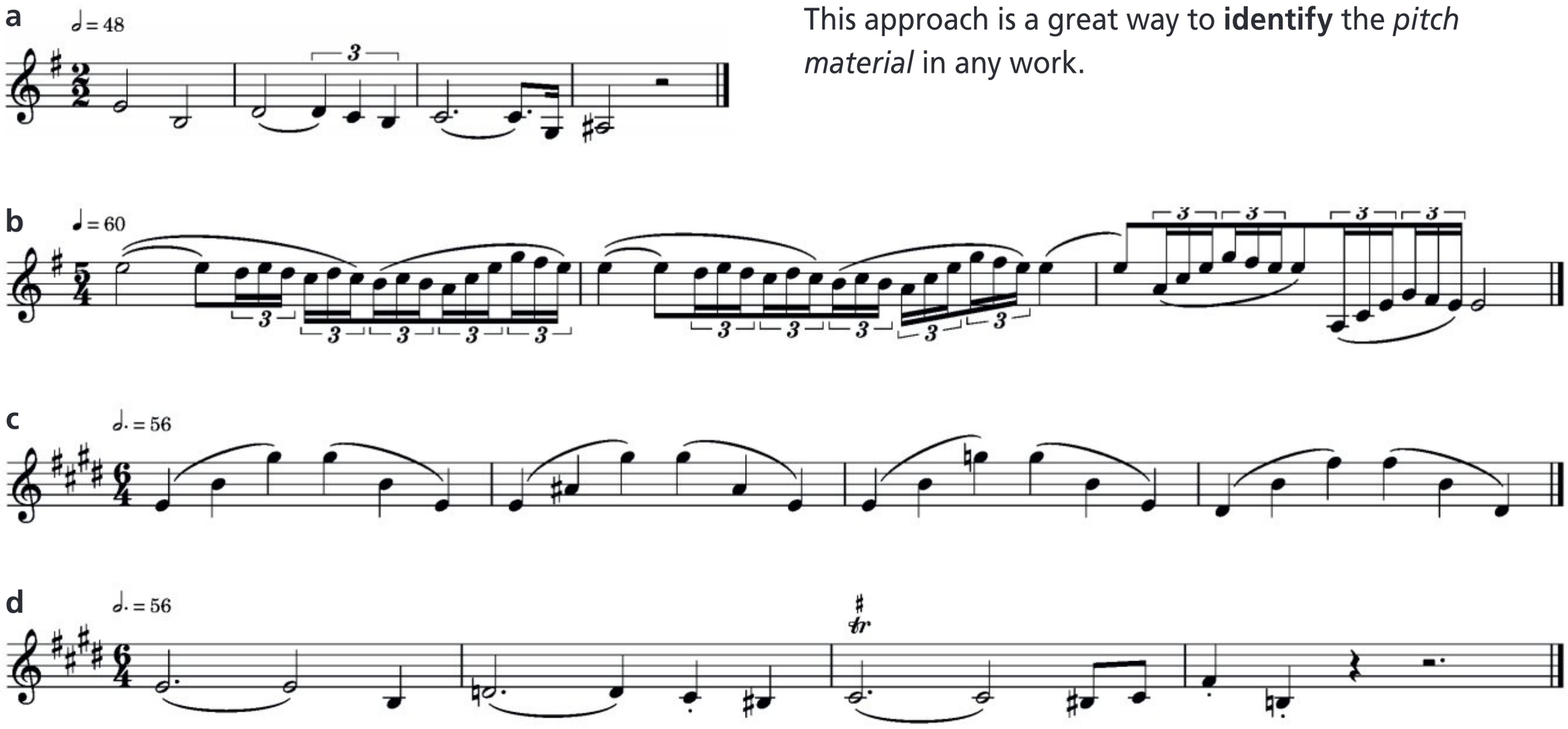
Pitch material includes everything from the actual notes played to their variation in each repetition. But how can pitch material be identified within works that are so different? The best way is to start collecting 'fingerprint' materials of melodies, harmonies and bass lines in your portfolio. You can look for **a** repeated intervals or groups of notes, **b** the connection of smaller steps to larger leaps, **c** patterns that connect more than one note in an ascending or descending order and then **d** the repeating of smaller fragments of the main melody.

OPTIONS EXPLOSION

We will start with one of the Russian Five, Nikolai Rimksy-Korsakov, and his work *Scheherazade Op. 35*. Based on the tale 'One Thousand and One Nights', this work includes several stories. By creating individual melodies for each character, Korsakov brings them back for each tale, such as the evil Sultan, the Princess Scheherazade, the Ocean and Sinbad with his ship (you can listen to the work on the playlist). For each of these four themes (provided in Figure 2.33 below), answer the following questions in your portfolio:

1. **Describe your first observations of each melody, (any low or high notes used, steps or leaps, repeated patterns or no repeated patterns).**
2. **Brainstorm new or hidden options you may not have considered (the intervals used, the shape of each measure, smaller repeated sections or arpeggios).**
3. **List what you have discovered in your analysis of these melodies.**

This approach is a great way to **identify** the *pitch material* in any work.



■ **Figure 2.33** *Scheherazade* themes: **a** the Sultan, **b** Scheherazade, **c** the Ocean and **d** Sinbad

ACTIVITY: *The Water Goblin*

ATL

- Creative thinking skills: Applying existing knowledge to generate new ideas, products or processes

Antonín Dvořák (1841–1904) composed the symphonic poem *The Water Goblin Op. 107*, set to a poem published by Karel Jaromír Erben in 1896. The story itself is more like a horror–thriller, and it does not end well. A young maiden is drawn down into a magical watery world to marry a goblin who keeps her locked away from her family above. He is cruel, and even when she has a child she is not allowed to see her mother. This is where the main conflict of the story begins. **Using** the themes in Figure 2.34, we will be looking at how Dvorak **develops** his pitch material, and how we can do the same.

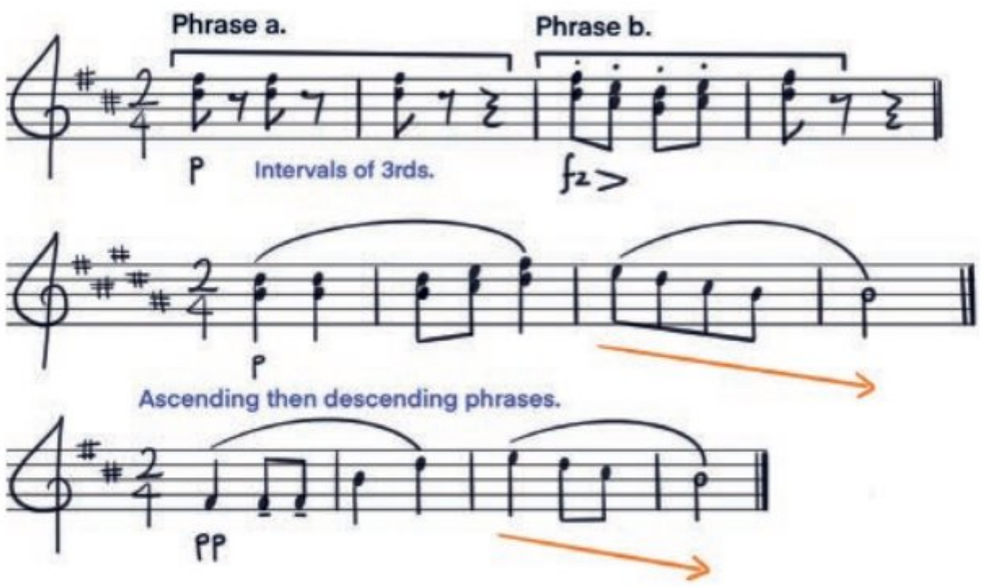


Figure 2.34 *The Water Goblin* themes with shape and annotations: **a** the Water Goblin, **b** the Maiden and **c** the Mother

1. **In your portfolio, create a mind-map of these themes, adding any observations of the melodies.**
2. **Discuss as a class what is similar or reused in each of the three themes.**

Hint

Use the two measure groupings in Figure 2.34 as a guide.

You should have noticed three things instantly: **a** They all have two measures as a question, then two measures as an answer, **b** the first measures are repeated with the last ones varied and **c** the Goblin theme has notes moving in steps of 3rds and staccato, the Maiden is very similar yet moves smoothly while the Mother has some leaps and a similar direction to her daughter's.

Your task is to develop each theme as if there was a twist to the story. The new characters we will introduce are: **d** the Goblin's Sister (who is even worse) and **e** the Maiden's Rescuer from the surface (sent by the mother). Using the original themes as starting points, play and notate new themes for the **d** sister and **e** rescuer. You can repeat, reuse and copy the pitch material Dvorak used in Figure 2.35.

Hint

Use MuseScore to compare your themes to the others in your class. If you find someone's ideas work really well, ask: How did you create that? or What were you playing to get that pattern?

Assessment opportunities

In this activity you have practised skills that are assessed using Criterion B: Developing skills and Criterion C: Thinking creatively.

Music exploration: 'Al Bint El Shalabiya'
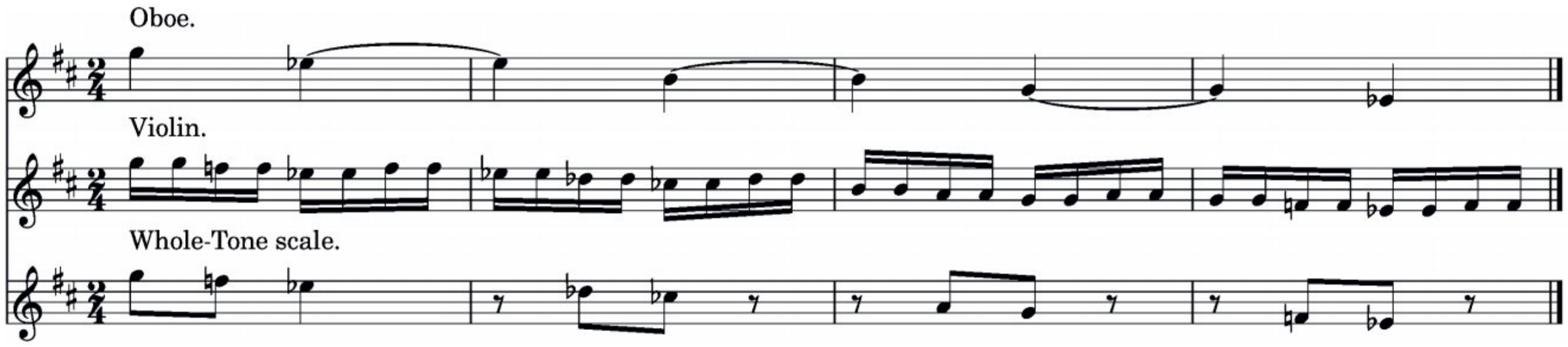
'Al Bint El Shalabiya' ('The Girl from Sevilla') is a beautiful Andalusian folksong from the greater Syrian region that has been performed by many cultures. The lyrics clearly point to it being a love song: 'The girl from Shalabiyah / Her eyes are almond-shaped / I love you from my heart…', and the music has a distinctive sound because of the use of pitch material named *Maqam Nahawand*. This musical-melodic form is the entire basis for the work. You can download a chart of the song at **https://carmine.com/haflasongs** and listen to the Beirut Oriental Ensemble perform it on the playlist.

As you perform and sing the melody, annotate / scribble on the score the following four points:

1. **Shape of the melody:** Does the pitch material go up, down or stay around a certain note?
2. **Repetition of the melody:** Does the pitch material repeat? As one large section or smaller fragments?
3. **Development of the melody:** When the material does change, are parts still similar to the main melody?
4. **Variation of the melody:** When new ideas or notes are added to the original pitch material, how is this done? As ornaments, slides…?

OPTIONS EXPLOSION

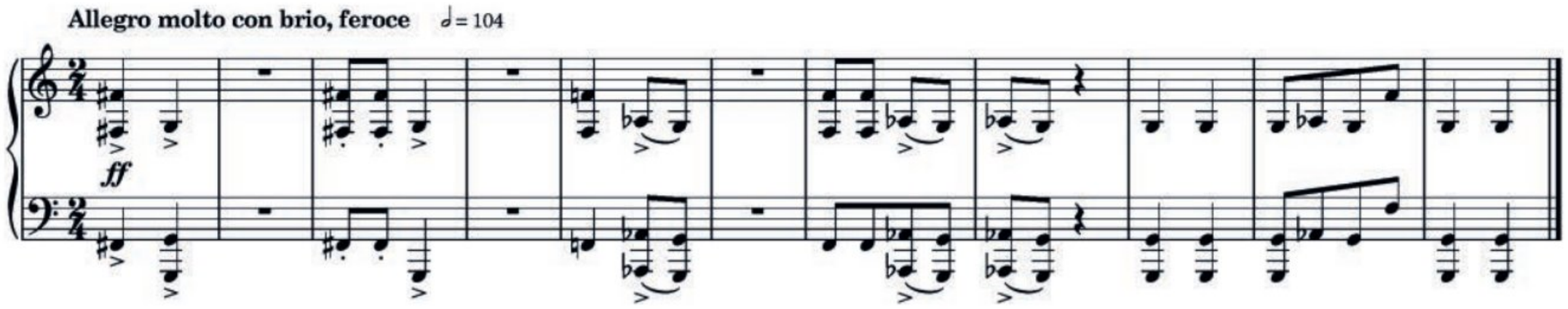
Rhythm is very important in storytelling and goes hand-in-hand with the *pitch material* discussed earlier. The **rhythmic material**, expresses everything from fear to joy, magic and the supernatural. Just take a look at Dvorak's use of semi-quavers and crotchets (16th and quarter notes) in *The Water Goblin* to help the audience interpret the young Maiden descending into a dark supernatural watery world. The pitch material combined with these rhythms is called a *whole-tone scale* (no half-steps):



■ **Figure 2.35** Maiden's descent into the magic water (with whole-tone scale)

Rhythm can also enhance the pitch material and become a force in and of itself. **Using** rhythmic sections of Mussorgsky's 'Baba Yaga' from *Pictures at an Exhibition*, listen to the track on the playlist and then answer the following questions in your portfolio:

1. **Describe your observations of each rhythm pattern (for example long notes or short notes, rests).**
2. **Brainstorm new or hidden options you may not have considered (for example the combination of quarter and 8th notes – crotchets and quavers – rests and spaces or accents).**
3. **List what you have discovered in analysing these rhythms or combined rhythms.**



■ **Figure 2.36** 'Baba Yaga' opening by Mussorgsky
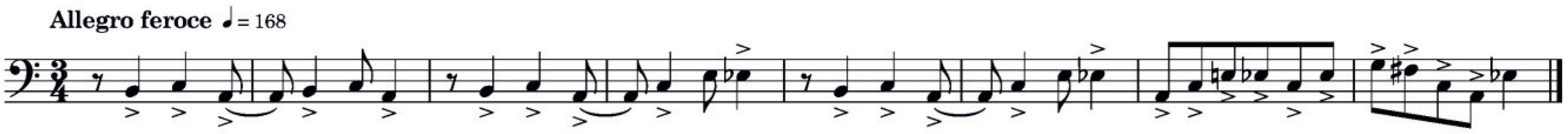
THE MUSICAL INGREDIENTS OF STORYTELLING (PART 2)

Writing music for heroes and villains is exciting. Whether it is for a computer-game boss or the characters in a film, the same elements need to be planned in advance. Ask yourself:

1. What is the *pitch material* going to be?
2. What is the *rhythmic material* going to be?

This is why it is important to keep a portfolio showing the musical 'fingerprints' of melodies and other patterns common to different cultures and styles. The more you listen and document what inspires you, the better chance it might become a part of *your* musical material.
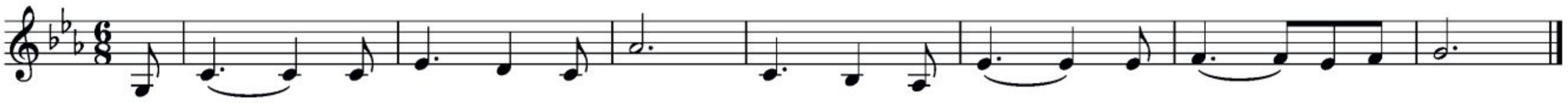
Igor Stravinsky (1882–1971) composed his ballet *The Firebird* based upon a Russian tale, where the protagonist Prince Ivan finds himself in an enchanted garden and a beautiful bird appears. However, the garden, and the castle nearby, belong to an evil magician named King Kastchei. Ivan captures the bird, yet it pleads to be set free. When Ivan does so, the bird grants him a magical feather.



■ **Figure 2.37** King Kastchei's 'infernal dance' theme



■ **Figure 2.38** Rey's theme shown in phrases 1, 2 and 3



■ **Figure 2.39** Siegfried's main theme

You will need to research the rest of the story and Stravinsky's ballet as we are looking directly at the theme for this evil magician, 'The Infernal Dance of King Kastchei': **https://youtu.be/6wbkKWrUD-A**

After listening to the performance in Figure 2.37, we can investigate the rhythmic effect of this *syncopated*, *3-part uneven theme*.

Syncopation is when accents are placed off of the main downbeat (here the downbeats would be 1, 2 or 3). The reason we are labelling it as a *3-part uneven theme* is that the first two repetitions are syncopated, but the last version is all straight quavers (8th notes). The theme itself sounds dark and exactly what we would expect for an evil magician, being played in low brass colours. This means we have a rhythmic fingerprint for villainous music.

But what about heroes? If we look into the film music of composer John Williams and the theme music for Rey from *Star Wars*, we get a repetitive pattern that is turned into **triads** (chords), and then with a similar rhythm made into a melody (similar to Figure 2.9 by Ravel).

Heroic themes often include triplets with repeated patterns (like The Star Wars or Rey's theme), and they include upward leaps in pitch (the Siegfried theme by Wagner first appears in the third act of *Die Walküre*).

This means we also have a rhythmic fingerprint for a hero or heroine's theme.

ACTIVITY: *The Firebird* vs *Star Wars*

■ ATL

■ Transfer skills: Inquiring in different contexts to gain a different perspective

Write your own theme by improvising a series of sketches for either a heroic or villainous character. Sit in pairs and play, sing or share your ideas with each other **using** technology until you have something that works. Remember to stick to the 'fingerprints' listed above and **present** your work as either notation or a mock-up version in GarageBand or SoundTrap.

◆ Assessment opportunities

◆ In this activity you have practised skills that are assessed using Criterion A: Knowledge and understanding, Criterion C: Thinking creatively and Criterion D: Responding.

Which musical ingredients are needed to narrate a story?



■ **Figure 2.40**

THE POWER OF ADVERTISING
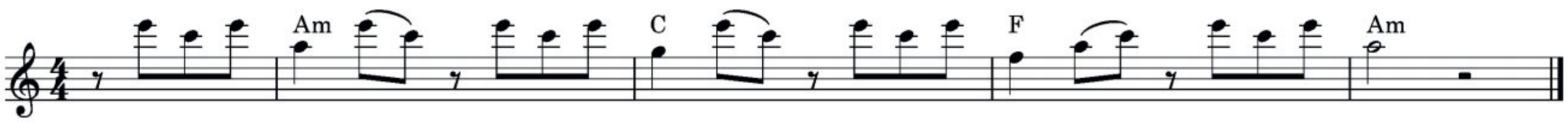
ACTIVITY: 'Eliza's Aria'

■ ATL

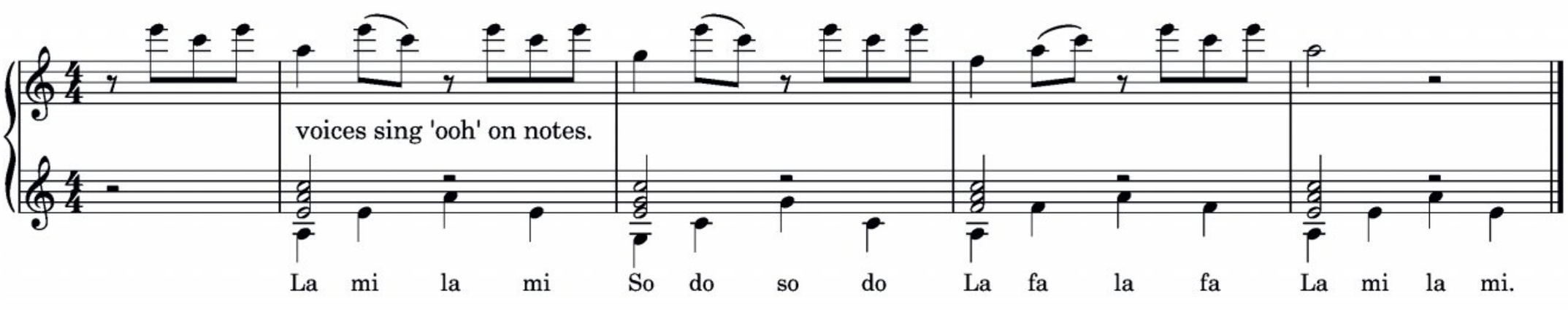
- Information literacy skills: Using critical literacy skills to analyse and interpret media communications
- Transfer skills: Utilising effective learning strategies in subject groups and disciplines

Identifying the narrative in advertising is a powerful skill. The following piece, 'Eliza's Aria' by Elena Kats-Chernin, is the second movement of her *Wild Swans Ballet Suite*. It was used for the Lloyds TSB cinema advertisement entitled 'The Journey to London 2012.' The chords and syncopated material **create** movement with each repetition.

Watch the advertisement at **https://youtu.be/lrThhNL0zBc** and listen to the track on the playlist. The question is: Can you identify what makes this piece such a good choice for the advertisement?



■ **Figure 2.41** 'Eliza's Aria' basic structure



■ **Figure 2.42** 'Eliza's Aria' for voices and bass line

1 a In groups or as a class, perform the chord progression with instruments, or with each person singing a note of the triads.

b Learn to play the arpeggio melody line, taking turns to play the chords as accompaniment.

2 a Sing and perform the bass line by itself (you can use **solfeggio**).

b Now improvise different sets of sustained notes on top with your voice or instrument to hear the different colours that occur.

c Experiment using rhythmic material that is shorter than the bass line. By choosing a rhythmic pattern like 'Rey's theme' from Figure 2.38, you will begin developing new ideas and patterns.

◆ Assessment opportunities

In this activity you have practised skills that are assessed using Criterion A: Knowing and understanding and Criterion D: Responding.

THINK–PAIR–SHARE

Every company wants our attention to convince us that their product is worth purchasing. Depending on what media you engage with, advertising will take several forms (a voice-over, short film or trailers, YouTube ads, and so on), but they will all involve music, and storytelling, to engage our imaginations.

Singer-songwriter Lilly Ahlberg performed the track to this Christmas commercial in 2016: **https://youtu.be/WDv26jZYhfk**. Watch the commercial and before the video ends turn to a friend to discuss what you **think** is being advertised.

How is the music connected to the narrative on the screen?

Ahlberg's musical material connects well with the narrative, and the chorus lifts at just the right moment. Get into **pairs** and discuss *how* her music works with the story, **using** pitch and rhythmic material as your answer points, then **share** your conclusions with the class.

ACTIVITY: Cadbury activity

ATL

- Communication skills: Writing for different purposes

Changing the narrative in advertising can be fun! Cadbury began a campaign using a claymation series with purple colouring, paired with the song 'Wouldn't It Be Nice' by the Beach Boys as their main musical material. The combination was incredible. Lyrics were rewritten for each commercial and a singular message of 'Wouldn't it be nice if the world was Cadbury' became the hook that was left in your head. You can watch the advertisements on YouTube and listen to the original on the playlist. **https://youtu.be/xo2wRvJ04ss**

Sing through the phrases provided after listening to The Beach Boys version. Take note of the repeated rhythmic and melodic material. Each phrase fits with 'wouldn't it be nice', further emphasising the chocolatey message.

1. **Choose a topic that you would like to advertise (it could be homework, safety, food or sports).**
2. **In your portfolio, write a series of lyrics that could be attached to this tune. You will need six lines, where only lines 5 and 6 rhyme. Line 7 will always remain the same.**
3. **Perform your creations to the class and start looking into other forms of advertising. You could have a future in this field of creativity!**

Assessment opportunities

In this activity you have practised skills that are assessed using Criterion B: Developing skills and Criterion C: Thinking creatively.

Original lyrics	Cadbury lyrics
Wouldn't it be nice if we were older,	Wouldn't it be nice if the world was Cadbury?
Then we wouldn't have to wait so long?	You could surf inside a chocolate tube
And wouldn't it be nice to live together,	Ride your board across the wave forever
In the kind of world where we belong?	Get wiped out and never get a bruise
You know it's gonna make it that much better,	And if a shark came up and tried to bite you
when we can say goodnight and stay together.	You could say 'I'm chocolate – I invite you'
	Wouldn't it be nice?
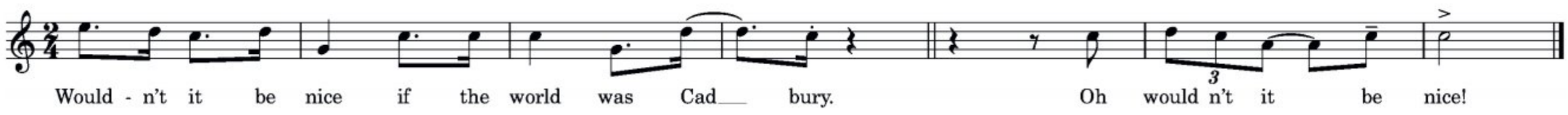


Figure 2.43 'Wouldn't It Be Nice' song starter (a), with ending (g)

How do cultures leave their 'fingerprints' in sound (music)?

CREATING AND EXPRESSING IDEAS

CONNECT–EXTEND–CHALLENGE

In 2006, director M. Night Shyamalan released a film that opened with a unique storyline. Watch a clip here from *Lady in the Water*: **https://youtu.be/mNNlbnB3e_s**

1. **After watching the prologue to this film, discuss how the narration and music connect to what you already know about storytelling.**
2. **What new ideas did you get that extended or pushed your thinking in new directions?**
3. **What is still challenging you about the connection between storytelling and music?**

In previous pages, we have looked into the pitch and rhythmic material of themes that were designed to narrate a tale. In this prologue, we have the complete package. Evaluate the track 'Prologue' from the playlist and generate a list that outlines **a** how you think pitch is used to tell the story, and **b** how changes in rhythm create movement.



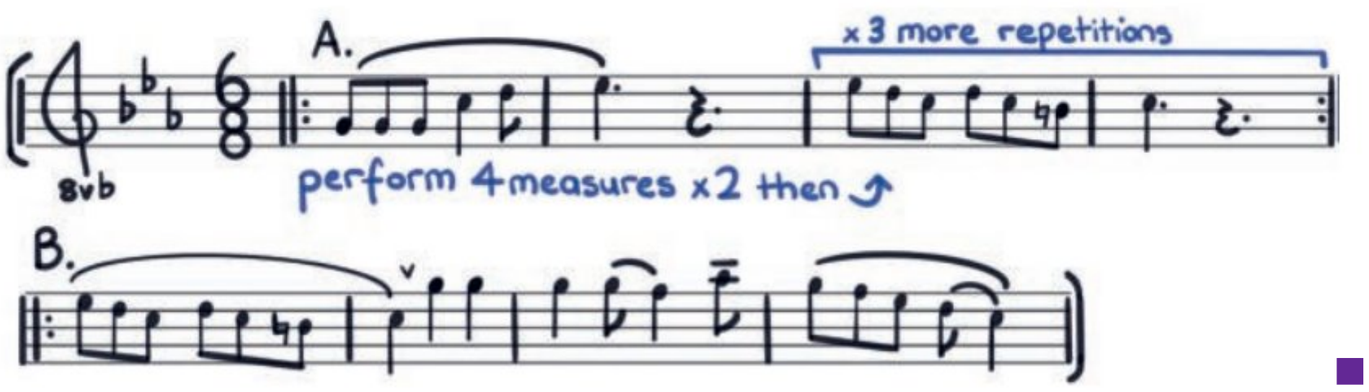
■ **Figure 2.44** A lady in the water

Portfolio presentation

Fingerprints of style

Identifying and listing the fingerprints of a style or culture is not easy. It requires much listening, research and then experimentation with what you discover. As you go through this textbook, make regular entries into your portfolio for musical 'fingerprints' to assist you in *identifying*, *describing*, *explaining* and *analysing* music. As a start, listen to the following tracks and write down bullet points that identify the main rhythmic or melodic elements of each. You can find them on YouTube or the playlist:

1. **Bob Dylan 'The Times They Are A Changin'':** Presented in strophic form, with guitar chords strumming a repeated rhythmic pattern and voice; each verse ends with a descending line on the refrain.
2. **Franz Schubert 'Einsamkeit' ('Loneliness'):** From a song cycle for voice and piano, it opens with a repeated accompaniment pattern of 8th notes, then slightly changes it to include some 16ths (quavers and semi-quavers)
3. **Traditional 'Ya Bent Bladi':** Arabic–Andalusian folksong from North Africa (Morocco); the pitch material uses Maqam Nahawand with two clear phrases ascending and descending. Repetition is clearly a powerful feature: but how is repetition used with each phrase? The last line of the song is different, with repeated notes on the refrain 'O daughter of my country'



■ **Figure 2.45** 'Ya Bent Bladi' traditional tune

ACTIVITY: Writing your own melodies

ATL

- Communication skills: Using a variety of media to communicate with a range of audiences

In this activity, you will be writing your own mock folktunes inspired by one of Aesop's Fables. Go back over any of the traditional music sources in this chapter and pick one piece, for example Glinka's 'The Lark', which you can view on YouTube: **https://youtu.be/cxlf-ZmE8JI**

Glinka's melody has a definite shape and structure. Annotate your chosen melody to **identify** particular patterns and shapes (like Figure 2.46), then visit **www.gutenberg.org/files/19994/19994-h/19994-h.htm** and choose one fable. In each story there is a protagonist animal that you can compose a theme for.

1. **Start by choosing a note and improvise with an instrument a brand-new shape and series of patterns.**
2. **Now chant the name of your fable's animal (for example tur-tle). Attach similar rhythmic material to your chanted lines and repeat it several times (Figure 2.47).**
3. **Now try notating your ideas, two measures at a time, with manuscript or software like MuseScore. Pair two measures with an answering repetition, just like our studied folksongs.**

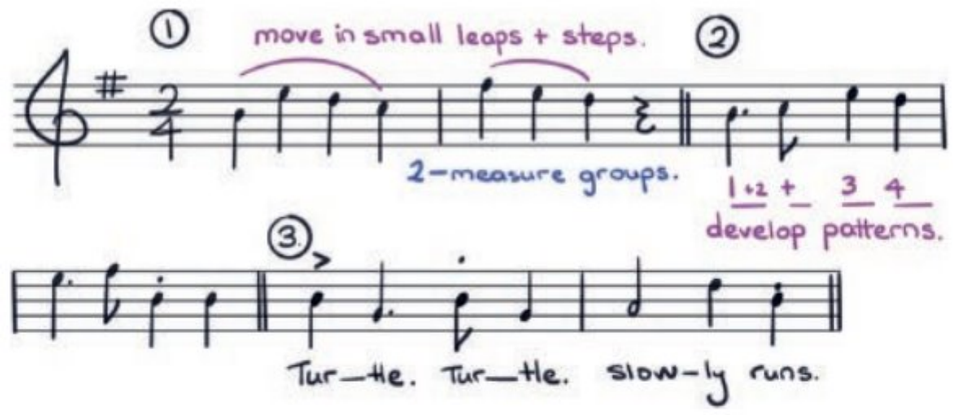


Figure 2.47 Lark and Turtle chanting and question–answer option

Aim to have a four- to eight-measure melody that you have created from an original folksong template. Play it for peer feedback and add to your portfolio!

Assessment opportunities

In this activity you have practised skills that are assessed using Criterion B: Developing skills, Criterion C: Thinking creatively.

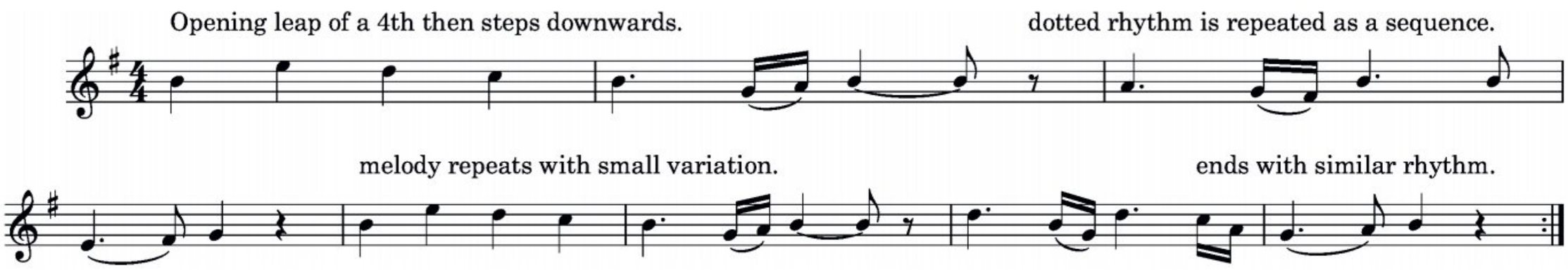


Figure 2.46 Glinka's 'The Lark' annotated with features we have discussed
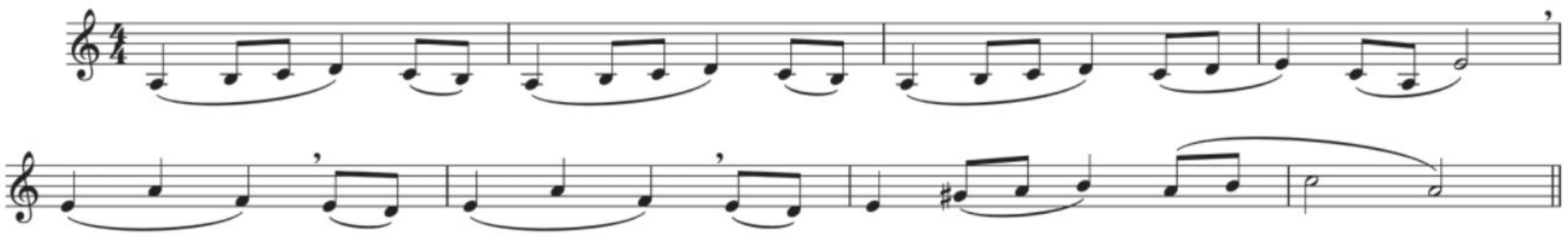
EXTENSION

Ensemble performance: 'Cradle Song' (Russian Jewish lullaby)

Kitka is an American women's vocal arts ensemble inspired by traditional songs and vocal techniques from Eastern Europe and Eurasia; with all their characteristic tone qualities, ornaments, rhythms and harmonies. Listen to 'Cradle Song' from their album of the same name here: **www.kitka.org/listen**

Based upon A Aeolian mode, the pitch material is centred around 'A' and forms a **vocal round**, with distinct entry points. Perform this piece in your class or as an ensemble.

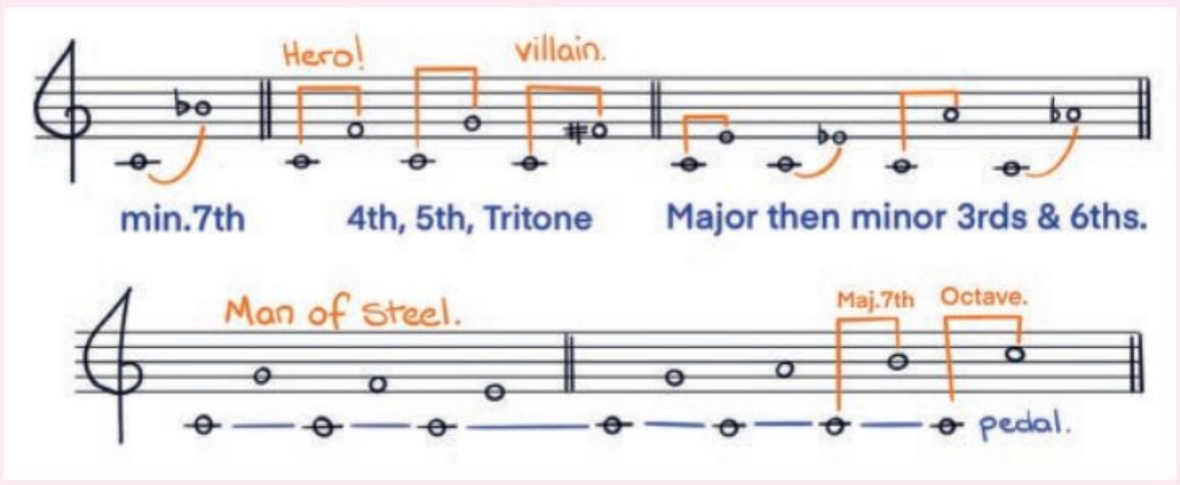
How would you describe the rhythms and melodic material of this piece?



■ **Figure 2.48** 'Cradle Song' transcription sections A and B

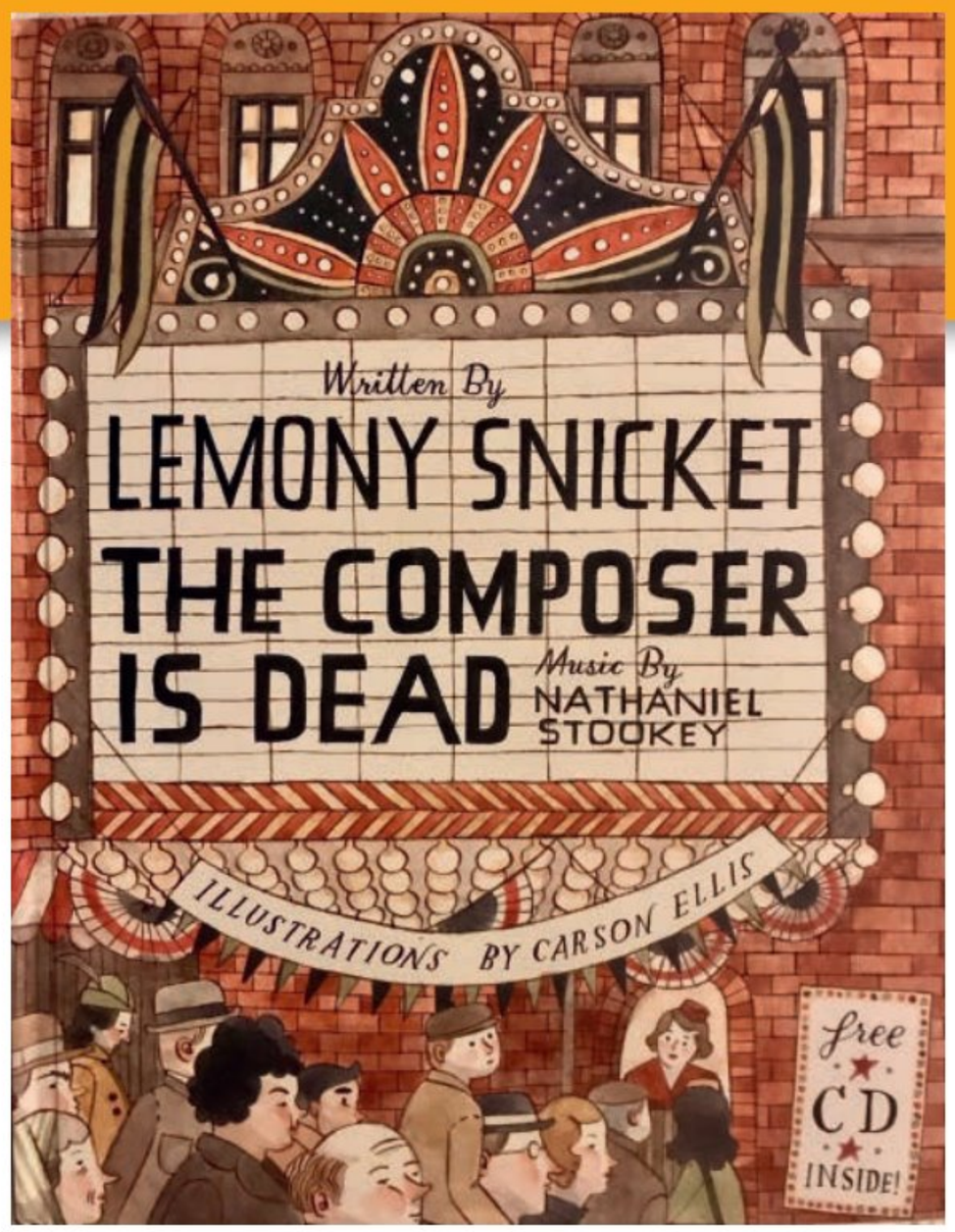
Music exploration: Listening skills: Intervals

In an earlier section, we talked about the idea of notes having spaces between them called *intervals*. Intervals have their own 'colour' and are often used in films to communicate heroism, death or even 'look out, here comes the villain!'. A contemporary example would be the opening **motif** to Captain Marvel's theme, written by Pinar Toprak and unpacked on YouTube here: **https://youtu.be/LPP84uisfms**. Its opening leap is a minor 7th and is notated below. The final example, 'Ideal of Hope', is brilliant because it keeps C on the bottom as a pedal note, changing the notes above to form a perfect 5th, 4th, 5th, 6th, major 7th and finally an octave. It was used in the 2013 film *Man of Steel*.



■ **Figure 2.49** Intervals outlined with Captain Marvel leap and 'Ideal of Hope'

Are all stories simply versions of archetypal myths?



■ **Figure 2.50** *The Composer is Dead*, music by Nathaniel Stookey with text by Lemony Snicket
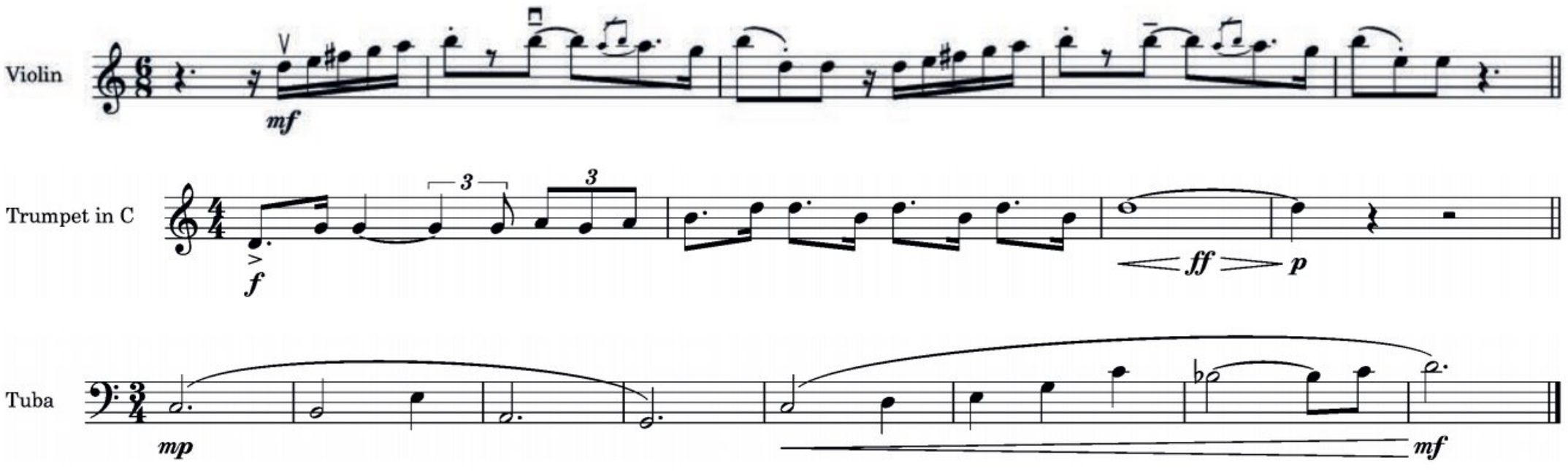
LAYERS

Composer Nathaniel Stookey and writer Lemony Snicket collaborated on a project called *The Composer is Dead.* This work was commissioned by the San Francisco Symphony in 2006 and can be viewed here: **https://youtu.be/Y9gkJ0wDBVg**. It is a symphonic poem, with live narration similar to Prokofiev's *Peter and the Wolf*. The aim is to combine the story and mystery of the title with music written specifically for each section of the orchestra.

As you watch the performance on YouTube, discuss and **identify** each of the following points. You can **use** cards, sticky notes or your portfolio.

1. **Narrative: What is the story or hidden message in the tale?**
2. **Aesthetic: What is the appeal (what pulls you in?) and the skill / mastery of the artwork?**
3. **Mechanical: What techniques and structures are used?**
4. **Dynamic: What supplies the tension, emotion or movement in the work?**
5. **Connections: What connections to other works can you identify from listening to this piece?**

As you will have noticed, you are analysing the musical fingerprints of the work. There are beautiful themes for each orchestral section. Comment on the themes below and add them to the 'musical fingerprints' section of your portfolio.



■ **Figure 2.51** *The Composer is Dead themes*; see also www.musicsalesclassical.com/composer/work/35253

ACTIVITY: Revolting Rhymes

ATL

Communication skills: Writing for different purposes

Roald Dahl's (1916–1990) *Revolting Rhymes* parody our world's version of fairytales. They give the characters different endings (sometimes gruesome ones) and place a twist on the morals that the original stories held. The poems are illustrated by Quentin Blake, and the BBC turned the works into an animated film with superb music in 2016.

In this activity, we will transfer all our experiments and improvised patterns to composing for a short segment of Roald Dahl's version of 'Goldilocks and the Three Bears' (see https://allpoetry.com/Excerpt--Goldilocks-and-the-Three-Bears), which has a gory twist at the end.

1 **Developing a rhythm set**
Using the poem itself, we can interpret the rhymes as rhythms, generating our own material just by reading it out loud. So do that first! The opening lines can be chanted in many different ways, but as you do this try to write down rhythm notes for each syllable that you 'speak' (see Figure 2.52).

2 **Developing a pitch set**
Once you have experimented with chanting the words, we need to improvise over a select group of notes for different parts of the story. This is called a *pitch set*. But which notes and how many? The best news is that this is completely up to you! Just keep the set (or group of notes) to around 4–6 notes on a piano or your instrument (for example do re mi so si la, c d e g g# a).

Using the rhythmic patterns in Figure 2.53 of 'crime one, crime two, crime three, crime four' attach your chosen notes to each rhythm. Then chant / play through the selection until you are satisfied with how it sounds.

3 **Add to the narrative**
This is where you combine your notated music, collaborate with a narrator and perform your work to a live audience. Remember: You want them to interpret your intent through the music and narration. Go through the poem, repeating this process of finding the rhythmic pattern, notating it, then attaching notes from your chosen pitch set.

Hint

You can actually listen to a version composed by Kurt Schwertsik on the playlist for more advanced creative work.

4 **The Bears**
In the story, there are three bears. Using a the rhythmic material and b the pitch material above, write a short four-measure tune for each bear. Try to consider their size, age and role in the story. How would you interpret each bear's theme?

Assessment opportunities

In this activity you have practised skills that are assessed using Criterion B: Developing skills, Criterion C: Thinking creatively and Criterion D: Responding.

RHYMING IS MORE THAN JUST TIMING

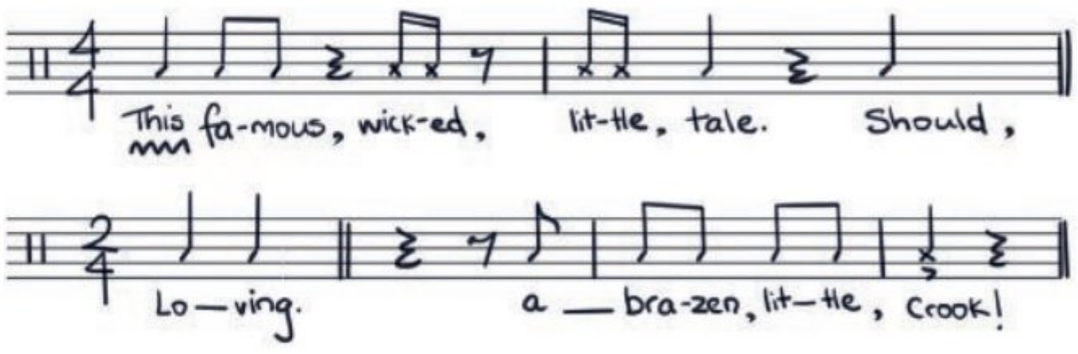


Figure 2.52 Rhythm set ideas based on Roald Dahl's poem of 'Goldilocks'
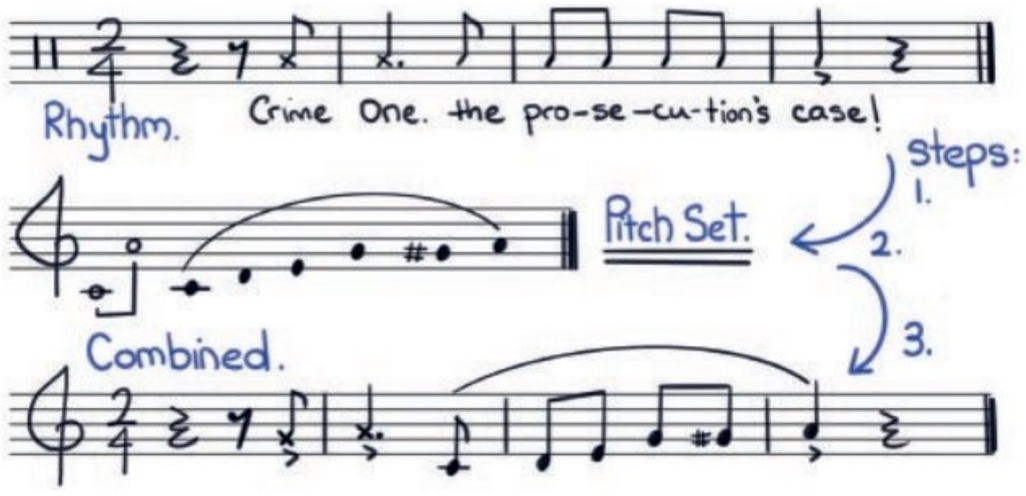


Figure 2.53 A pitch set of Crime

How can a story be told through music?

Reflection

In this chapter we have *examined* music from different cultures, timelines and styles. We have *discussed*, **identified** and **outlined** different ways in which music can narrate a story and express national pride, loneliness, love and even the supernatural. We have also **formulated** a pathway to collect and *compare* both melodic and rhythmic material for our own creation and performance. We then *defined* the differences in storytelling techniques by *analysing* musical fingerprints and interpreting meaning from the combination of pitch and rhythm.

This chapter sought to provide you with ways to connect with ideas that other artists have also used to express themselves (from poetry to visual artworks and words). By thinking through the process of interpreting different symbols in literature or music, you should be able to create music that expresses itself with understanding.

SOME SUMMATIVE OPTIONS TO TRY

Use these ideas to apply and extend your learning from this chapter. These problems can be assessed using any of the strands suggested above the summative activities. The presentation and portfolio requirements are given after the description.

THIS TASK CAN BE USED TO EVALUATE YOUR LEARNING IN CRITERION A AND CRITERION D (ALL STRANDS).

SUMMATIVE 1

Research and **create** a script for a short film that would analyse the musical elements of *The Composer is Dead*, comparing it to Dvorak's *The Water Goblin* or Korsakov's *Scheherazade*. This script needs musical examples taken directly from the scores or analysed aurally, clearly showing their pitch and rhythmic material as connected to the story.

Presentation and portfolio

Using this link with the score **www.musicsalesclassical.com/composer/work/35253**, **identify** and **present** in a series of storyboards and then a mock script **a** key musical themes for each orchestral family, **b** observations on how they were written for the orchestral family and **c** connections to cultural styles (such as a tango, swing, march or waltz). This can also form the basis for your comparison of the pitch and rhythmic material to Dvorak or Rimsky Korsakov. Make sure you clearly label and annotate the musical details of each in your portfolio.

Resources for your task:

1. **About *The Composer is Dead*:** **https://youtu.be/lPBDHnlhvSQ**
2. ***The Composer is Dead* score on demand:** **https://issuu.com/scoresondemand/docs/the_composer_is_dead_35253**
3. ***The Composer is Dead* performance with story:** **https://youtu.be/Y9gkJ0wDBVg**

THIS TASK CAN BE USED TO EVALUATE YOUR LEARNING IN CRITERION B AND CRITERION C (ALL STRANDS).

SUMMATIVE 2

Develop your own music to a fairytale, fable or a story by authors such as Oscar Wilde. There are books on Celtic, Russian, ancient Greek and Arabic tales that will connect to a personal or cultural form of expression that you can compose for. Your goal is to be able to read the story out loud and, much like a storybook that has audio, you are to compose in MuseScore, GarageBand or SoundTrap several themes (a minimum of four) that are ready for playback.

Presentation and portfolio

Make sure to identify, collect and experiment with the musical fingerprints discussed in this chapter so that you can match the characters of the story to your music. **Present** the final work with the narrated story as either a score using technology or live playback.

Resources for your task:

1. ***The Emperor's New Clothes*** **themes by a past student: https://youtu.be/pDmyUuti2wQ**
2. ***The Happy Prince Composition Project*** **by a group of students: https://classroom.wrightstuffmusic.com/thehappyprinceproject.html**

Portfolio presentation

Documenting and sharing

Keeping in line with all your activities, ideas and explorations, use the concepts discussed in this chapter to investigate more fairytales, attend concerts of symphonic poems such as *Peter and the Wolf* and listen to global music. Remember to build your use of language that refers to pitch and rhythmic material.

Use this table to reflect on your own learning in this chapter.

Questions we asked	Answers we found	Any further questions now?
Factual: What is a story with music called? What is a folk song? Who were the Russian Five? What is strophic form?		
Conceptual: How can a story be told through music? Which musical ingredients are needed to narrate a story? How is a musical story constructed? How does music represent people, places or things?		
Debatable: Are all stories simply versions of archetypal myths? Is there an expressive 'fingerprint' of sound that identifies cultures around the world? To what extent does music change or improve a narrative?		

Approaches to learning you used in this chapter:	Description – what new skills did you learn?	How well did you master the skills?			
		Novice	Learner	Practitioner	Expert
Communication skills					
Information literacy skills					
Creative thinking skills					
Transfer skills					

Learner profile attribute	Reflect on the importance of being knowledgeable for your learning in this chapter.
Knowledgeable	

3 When does music change direction?



■ **Figure 3.1**

Artistic **innovation** **changes** what is **presented**, and how it is **expressed**.

CONSIDER THESE QUESTIONS:

Factual: What is minimalism? What is a canon or prolation? What is a chord or chord extension?

Conceptual: What forms of change exist in music? How do artists approach change? Which features define transformation in music? How can an artistic intention be viewed as innovative? What role does technology play in the interaction of artists and audiences?

Debatable: Is music without change just organised noise? Do musicians need to know theory and / or harmony to be successful? To what extent does the expression of other cultures influence change?

Now **share and compare** your thoughts and ideas with your partner, or with the whole class.

IN THIS CHAPTER, WE WILL…

- **Find out** how changes in musical thought and practice result in the generation of new approaches for music-making.
- **Explore** moments of change that become catalysts for popular and contemporary styles in the modern era.
- **Take action** through transforming original ideas, and choosing creative presentation tools to identify and perform music in different contexts.

Assessment opportunities in this chapter:

- Criterion A: Knowing and understanding
- Criterion B: Developing skills
- Criterion C: Thinking creatively
- Criterion D: Responding

These Approaches to Learning (ATL) skills will be useful…

- Communication skills
- Collaboration skills
- Reflection skills
- Media literacy skills
- Creative thinking skills

We will reflect on this learner profile attribute…

- Thinkers: We use critical and creative thinking skills to analyse and take responsible action on complex problems. We exercise initiative in making reasoned, ethical decisions.



KEY WORDS

chant	repetition	drone
sequence	motif	pedal
ostinato	development	chord extension
tone-row	raga	phasing
monophonic	tala	texture

Prior knowledge

This chapter works on the premise of including all levels of learners. You will find it useful to know:

- how to play and / or identify forms of notation such as sequences, arpeggios, rhythms, chords or bass lines
- how to read and / or interpret musical scores to perform or document features of interest
- how to work collaboratively to express musical ideas, recording and then documenting those ideas
- what working within an ensemble means for balance and intonation
- ways of describing music using concepts of building blocks
- how to approach experimenting and presenting musical ideas from research and discussion.

Examples, links and referenced materials will guide you further.

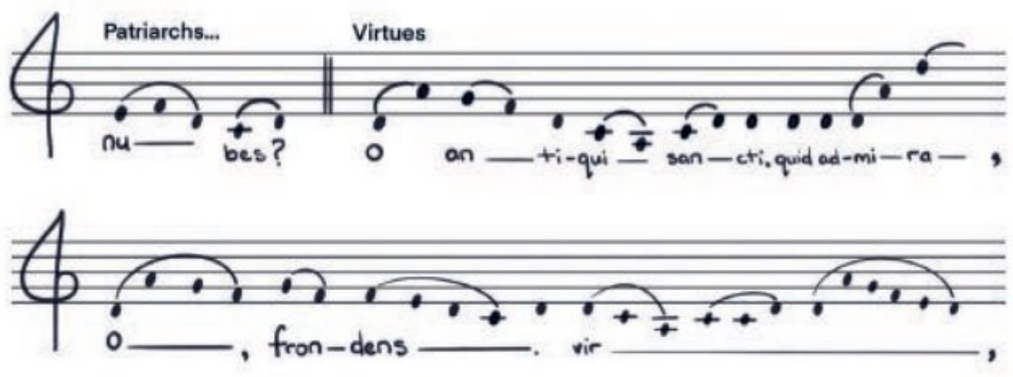


Figure 3.2 Hildegard's 'Ordo Virtutum' ('Virtues singing after the patriarch' c. 1151) compared with Hildegard's 'O Frondens Virga'

Portfolio presentation

This will be your focus point of each inquiry moment in this chapter. When an activity is presented, document in your portfolio the *evidence of change* that outlines:

1. the **development** of an idea from one state to another; particularly *how* it is transformed
2. the *repurposing* of an idea (from a composer or culture) that makes it original or innovative
3. how an *audience* did, or might, react to an idea's presentation.

This will be your guide to evaluating how innovative ideas really work.

ACTIVITY: Chant and modern media

ATL

- Creative thinking skills: Making unexpected or unusual connections between objects and / or ideas

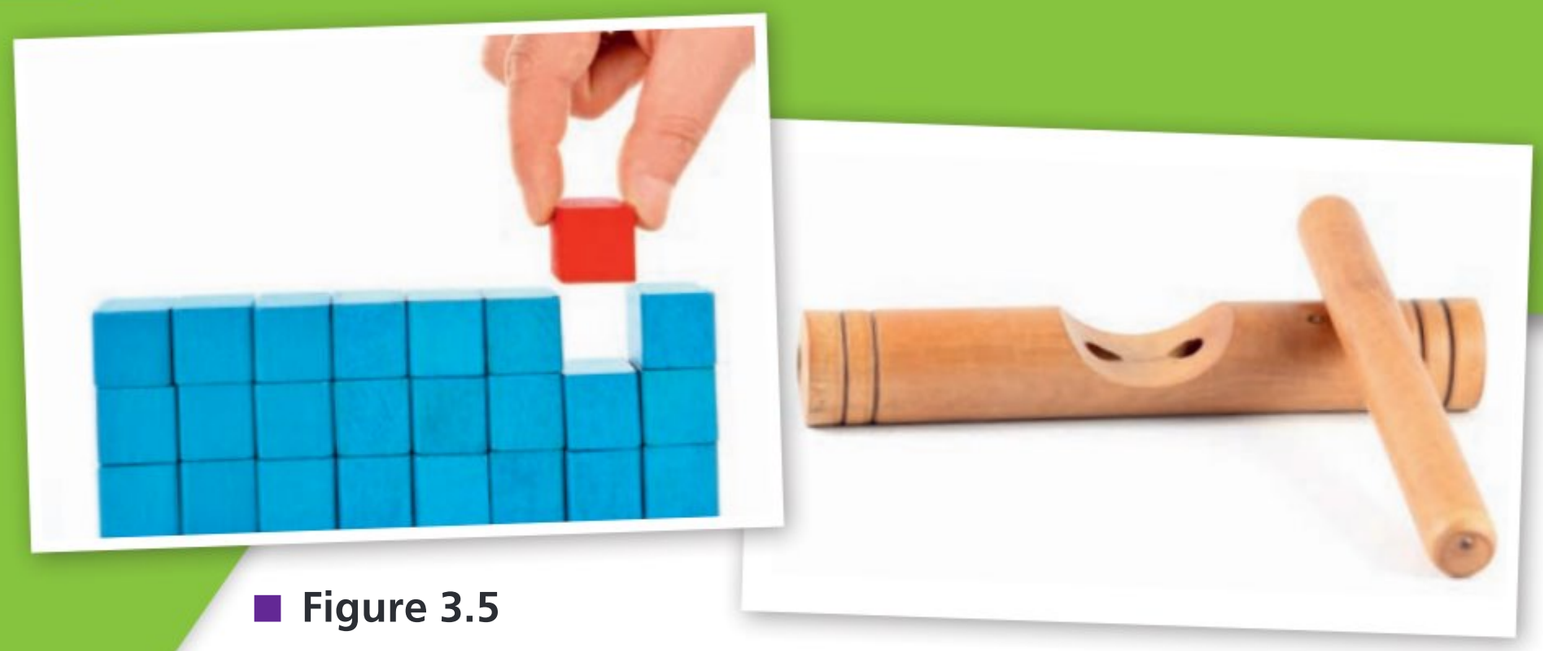
Hildegard von Bingen (1098–1179) was known as a nun, visionary, prophetess and artist. Her music was composed in a late **plainsong** or **chant** style, and it **outlines** unique musical evidence from the 12th Century. Hildegard set music to one of the first 'morality' plays: 'Ordo Virtutum' with a cast including souls, the devil and chorus (group of singers). Her musical works utilise certain **modes** that pre-date our major and minor **scale** system. You will hear on the playlist two examples of vocal lines that will move around D and return to this **pitch** after moving through different shapes.

Sing the lines of Figure 3.2 as a class. You can **use** classroom instruments to hold a long D-note underneath (this is called a **pedal**). Finally, listen to the modern version of 'O Frondens Virga' by the group Garmarna. Discuss how you think they transformed a 12th Century chant into this modern version.

Assessment opportunities

In this activity you have practised skills that are assessed using Criterion A: Knowing and understanding and Criterion D: Responding.

What is minimalism?



■ **Figure 3.5**



■ **Figure 3.3**

PRESENTING MUSIC

Musicians in the 20th Century began to emphasise certain elements over others, mainly because they wanted to see something new emerge from the traditions of Western music's long-held legacy. For example, **rhythm**, and all of its many creative options, became a favourite exploratory palette for composer Steve Reich (b. 1936). Reich is a minimalist composer who experimented with a technique he called *phasing*. This is where one part remains constant, and another shifts in rhythmic units around it to generate new patterns. His piece 'Clapping Music' has an animated version on YouTube (**https://youtu.be/lzkOFJMI5i8**) that illustrates this concept.

Reich also composed works in 'phase' utilising tape machines and musicians – creating some of the first early electronic-live performances. We will make one of these later, but for now we will investigate Reich's 'Music for Pieces of Wood' because of its interesting approach to rhythm, and phasing.

SEE–THINK–WONDER

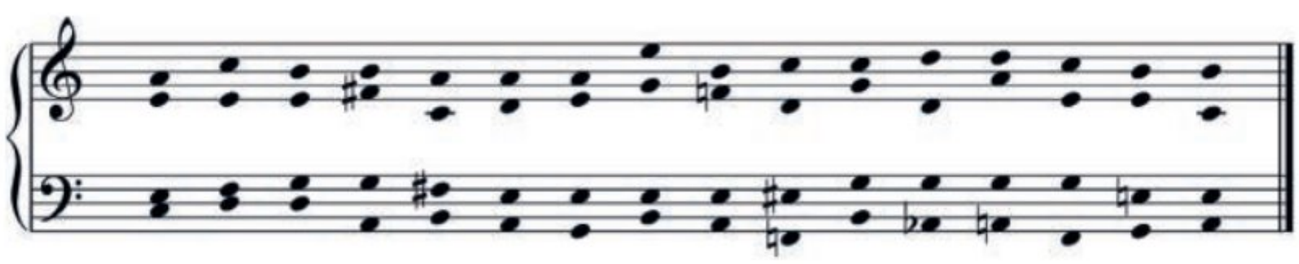
Howard Skempton is a composer who stretches the boundaries of what is possible in **presenting** music both to an audience and within the score. Minimalism is often presented as seeking to express sounds as independent moments, free from composer control. This is seen in the work '4'33' by John Cage that has the audience sit in front of a silent ensemble, contemplating the meaning of 'What is music?'

Whereas certain composers or artists in the 1960s–70s utilised different performance and scoring techniques, the reduction of musical materials to allow freedom of expression became regular features of this style. Skempton's works show an original approach to writing for space, repetition, and giving the performer control over the work. Below is a score inspired by his piece 'Of Late' (1967). What do you **see**? What do you **think** about it?

Listen to the piece 'Of Late' on the playlist or play this student composition. What does it make you **wonder**?

When asked what inspires him to compose, Skempton replied:

> *"Two experiences are crucial in rousing the passion to compose: the impact of live performance and the sight of the score."*



■ **Figure 3.4** 'Of Late'-inspired student composition. With no stems, the performer chooses when to move to the next note.

Hint

Clave is not just a rhythmic pattern from Cuba; it is also one of a pair of sticks that is most commonly associated with the rhythm.

Listening strategically: Get an IDEA

'Electric Counterpoint' is a work written by Steve Reich but it is performed in the playlist by jazz guitarist Pat Metheny. Metheny is a renowned, performer and composer. Using the technique of a **canon**, Metheny performs an early composition technique common in the Renaissance. What else can you **identify** or **describe** in the recording? What changes rhythmically? What changes in the **pitch material**?

Continuing from page 62, what Reich has done with 'Music for Pieces of Wood' is to create a palette of rhythmic ideas, layered them over the top of each other and given directions on how many times to play them, when to repeat, and when to move on. The result is a continuously moving pattern that you can both perform and imitate. You can view an animation of the work on YouTube: **https://youtu.be/gy2kyRrXm2g**

EXTENSION

Canons and counterpoint

Keeping track of musical terms can be tricky, but if you learn to **identify** them and how they are used in actual works, you will get it right.

1 A canon is the compositional technique where voices or melodies enter one at a time, often over each other. The first melody is stated clearly while the other melodies follow or **imitate**.

2 A repeating canon in which all voices are identical is called a **round** (for example 'Frère Jacques').

3 **Counterpoint** is an essential device in Western art music. It uses different techniques to layer voices or melodies over each other (techniques such as canons, **prolations** and imitation).

Hint

Drawing a diagram showing the differences between canons and rounds can be very helpful in identifying these musical techniques correctly.

ACTIVITY: Phasing patterns

ATL

- Creative thinking skills: Focusing on the process of creating by imitating the work of others

Grab a pair of claves, drum sticks or hand-held percussion and follow the directions below to make your own music for pieces of wood.

1 **In small groups, talk about the ideas of pattern and space in Reich's piece. What is constant in this work and what changes?**
2 **Notate a series of single-measure patterns in 4/4 that you can all play on your instruments (or draw boxes within a grid like in the YouTube video).**
3 **Check that your rhythms include longer notes, as well as shorter ones and rests.**
4 **As a group, decide how many times each pattern should repeat and who will start the performance.**
5 **Once the score has been sketched out with its repetitions, rehearse the patterns, making any edits needed.**
6 **Perform your work in front of your class or record it using a device.**

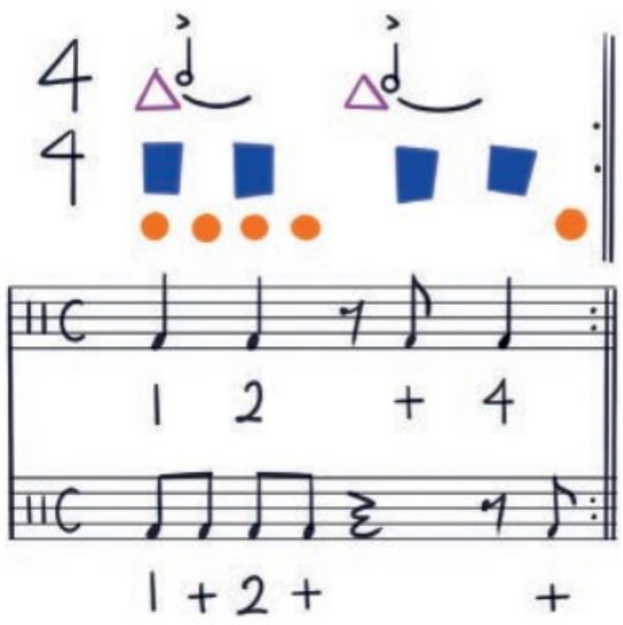


Figure 3.6 Graphic and notated example of patterns and space

Assessment opportunities

In this activity you have practised skills that are assessed using Criterion A: Knowing and understanding and Criterion B: Developing skills

What role does technology play in the interaction of artists and audiences?

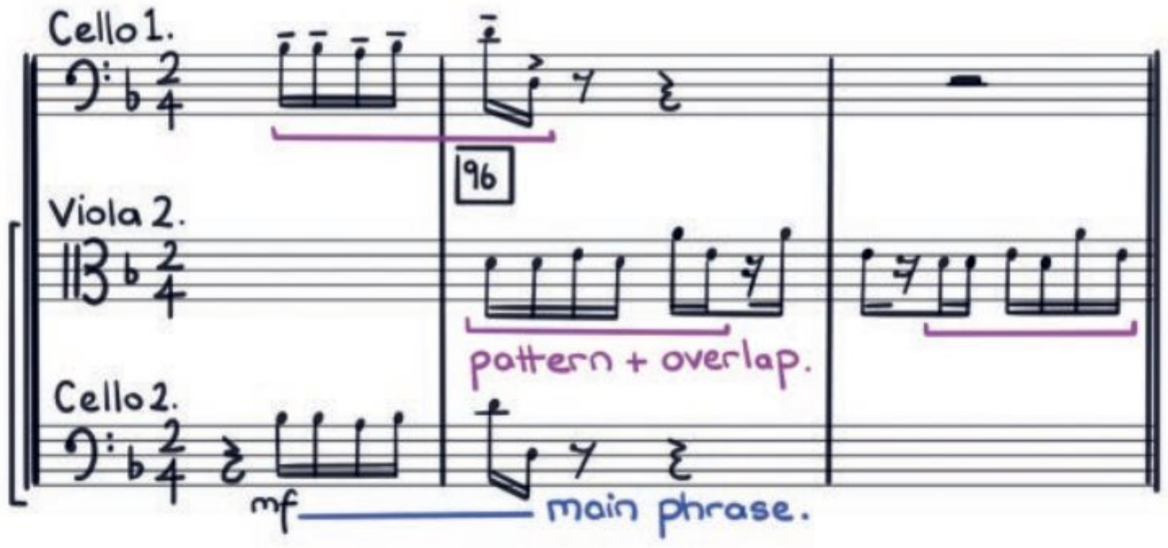


■ **Figure 3.7**

THINK–PUZZLE–EXPLORE

1. **What do you think you know about combining music and technology?**
2. **What questions or puzzles do you have about Reich's process?**
3. **How could you explore this topic further?**

Listen to *Different Trains* by Steve Reich and *collect evidence of change* that **demonstrates** when and where you hear change, or when specific musical elements shift in the piece.



■ **Figure 3.9** The third movement also introduces a rhythmic pattern with notated phasing

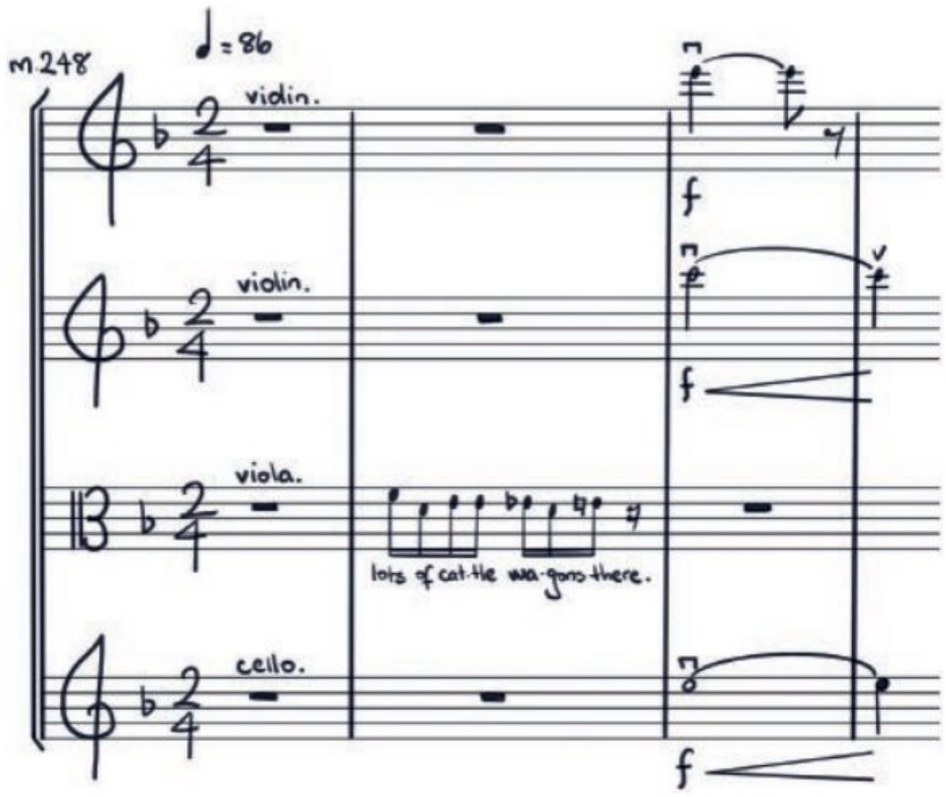
Reich comments that had he lived in Europe during 1939–1942 his train ride would have been very different from the ones he took with his governess between New York and Los Angeles.

Reich recorded a selection of people to add into his work – his governess, a porter and Holocaust survivors – that he notated as clearly as possible for the strings to imitate. The combination is both a documentary and a live presentation.

ELECTRONIC PHASING AND PERFORMANCE

The Second World War caused a monumental shift in history for artists, composers and musicians. The global scale of devastation affected many, and their music, to this day. The composer Steve Reich was similarly impacted and created his three-**movement** work entitled *Different Trains* (1988) by combining **string quartet** and pre-recorded tape (long before digital audio workstations like Logic Pro or Ableton Live).

- Movement 1: 'America before the War'
- Movement 2: 'Europe during the War'
- Movement 3: 'After the War'



■ **Figure 3.8** Vocal rhythm with stretched-out strings 'm248'

ACTIVITY: Audacity tape phase

ATL

- Media literacy skills: Communicating information and ideas effectively to multiple audiences using a variety of media and formats

Steve Reich is a highly influential composer who paved the way for many of the sounds and production techniques we have today. He was not alone, as other composers such as John Cage, La Monte Young, Pierre Boulez and Morton Subotnik each contributed in inventive ways to the soundscape of music in the 20th–21st Centuries.

Reich had to use magnetic tape and a series of **loops** to complete the activity we will engage in. His work of 1966 'Come out' used two tape machines playing the same loop, but one faster than the other. The rhythmic result of combining words on two different loop speeds meant they would start together, move out of phase, and gradually come back together again. You can listen to this on the playlist along with another example of phasing titled 'Electric Counterpoint: II. Slow'.

We will **create** a simple phasing rhythmic structure with a freeware tool for Mac and PC that allows you to stretch audio just like Steve Reich.

1. **Download and open *Audacity*® on your laptop: www.audacityteam.org**
2. **Record into the program (using the built-in microphone) a small phrase about a trip you have taken in your lifetime. It needs rhythmic clarity.**
3. **Once it has recorded, use the edit > cut feature to make the phrase fit into roughly the 1–3 second brackets.**
4. **Select and duplicate the phrase using edit > duplicate. You now have two identical phrases.**
5. **Select the top phrase with your cursor, go to effect > repeat and choose 200 times.**
6. **Select the bottom phrase with your cursor, go to effect > change speed. Type –2.5 and press enter.**
7. **Straight afterwards, go back to effect > repeat and choose 200 times again. You should now see two repeated phrases, and the bottom one slowly gets out of phase with the top one.**
8. **What is the rhythmical effect created by the vocal line repeating? How long does it take to return to being 'in sync'?**

You can imagine if you added a live ensemble playing similar rhythms that changed slowly, it would create a very interesting performance.

Assessment opportunities

In this activity you have practised skills that are assessed using Criterion B: Developing Skills and Criterion D: Responding.

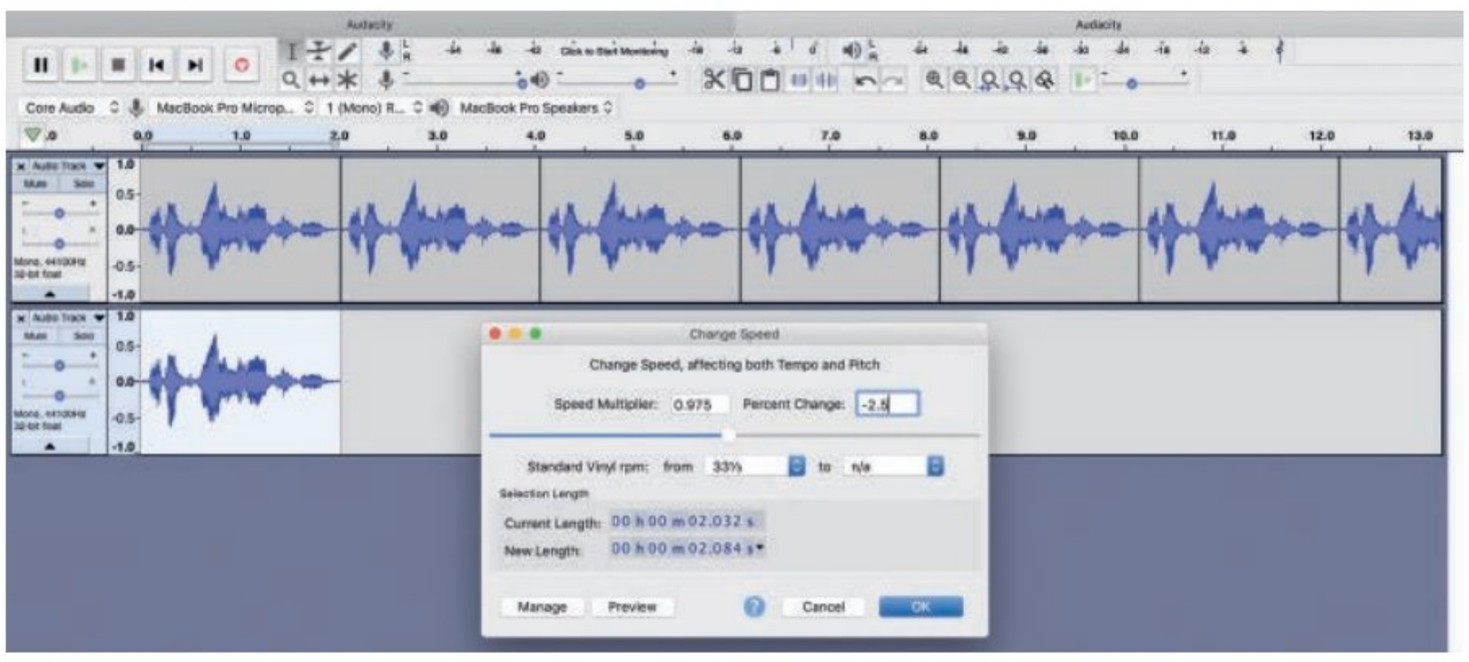


Figure 3.10 Recorded line with speed change



Figure 3.11 Recorded lines in Phase

What is a canon or prolation?

3–2–1 BRIDGE

In the 20th Century, composers were **presented** with change in the form of social upheaval, World Wars and new movements of art such as minimalism and expressionism. Additionally, artists from around the globe began to incorporate exotic aspects of other cultures into their music or bring it with them into the Western European art tradition (such as Igor Stravinsky using Eastern European folksong). As we have also seen, some composers 'time travelled' and brought older techniques such as canons into the future.

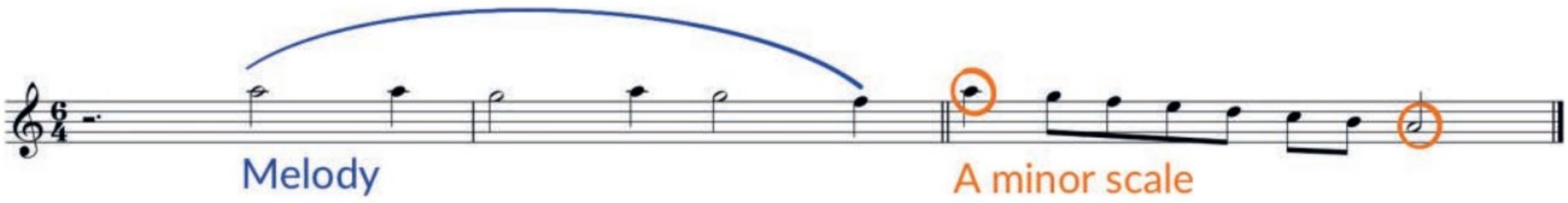
Arvo Pärt (b. 1935) is an Estonian minimalist composer whose ideas have been inspired by Medieval and Renaissance music. In 1977 he wrote a piece for a string orchestra and tubular bells 'Cantus In Memoriam of Benjamin Britten' as an elegy to his friend. You can view a preview score at Universal Edition:

www.universaledition.com/arvo-part-534/works/cantus-in-memory-of-benjamin-britten-1465
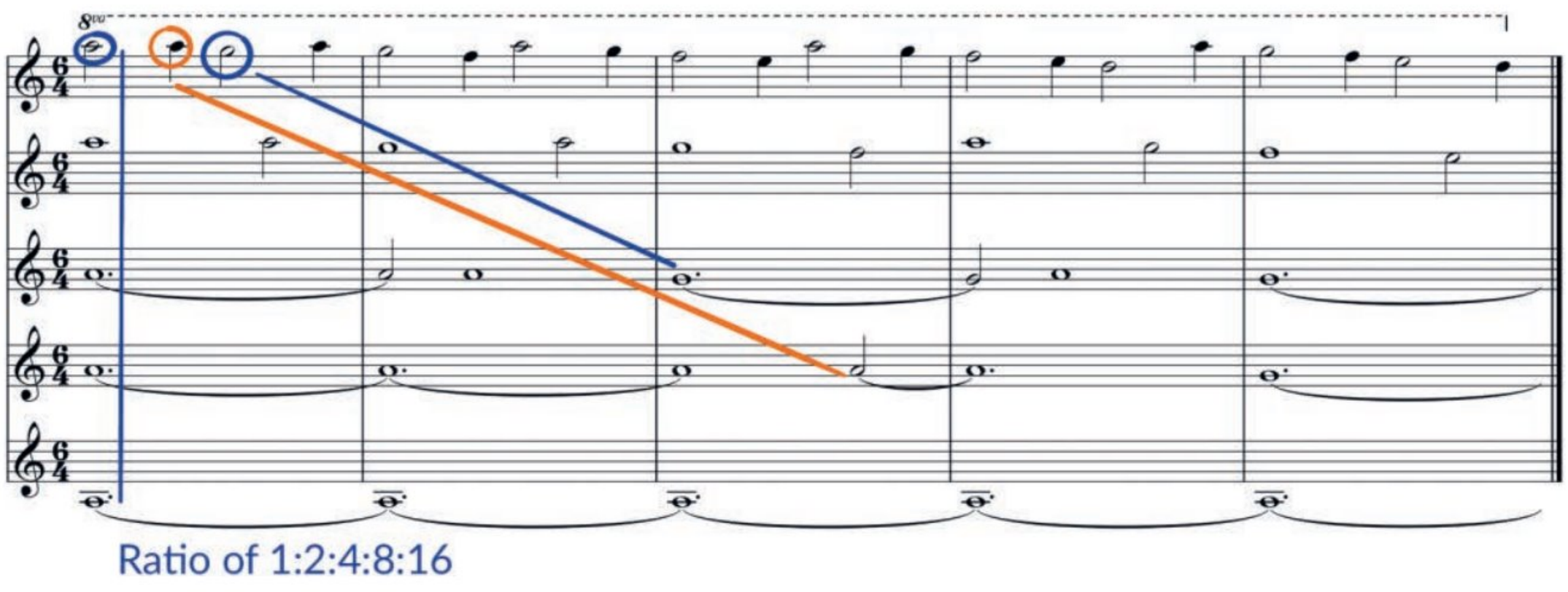
As you listen to the piece on the playlist, write down **three thoughts**, **two questions** and **one analogy** of this work.

This piece is built around something Pärt called his *Tintinnabuli* style (like a bell ringing). Most of the playing involves one descending A minor scale, started in the violins and repeated throughout the work in the ratio of 1:2:4:8:16. This means that the violins are playing the melody at the 'normal' speed, the next part is twice as long, then 4 times as long to 16 times as long in the basses. Pärt is using a Renaissance technique called a **prolation canon** where the same melody is used but in different lengths or ratios, layered at the same time.

Armed with this knowledge, in your portfolio write down another **three thoughts**, **two questions** and **one analogy** of this work. Share your new and initial thinking.



■ **Figure 3.12** Opening melody of 'Cantus in Memoriam of Benjamin Britten'

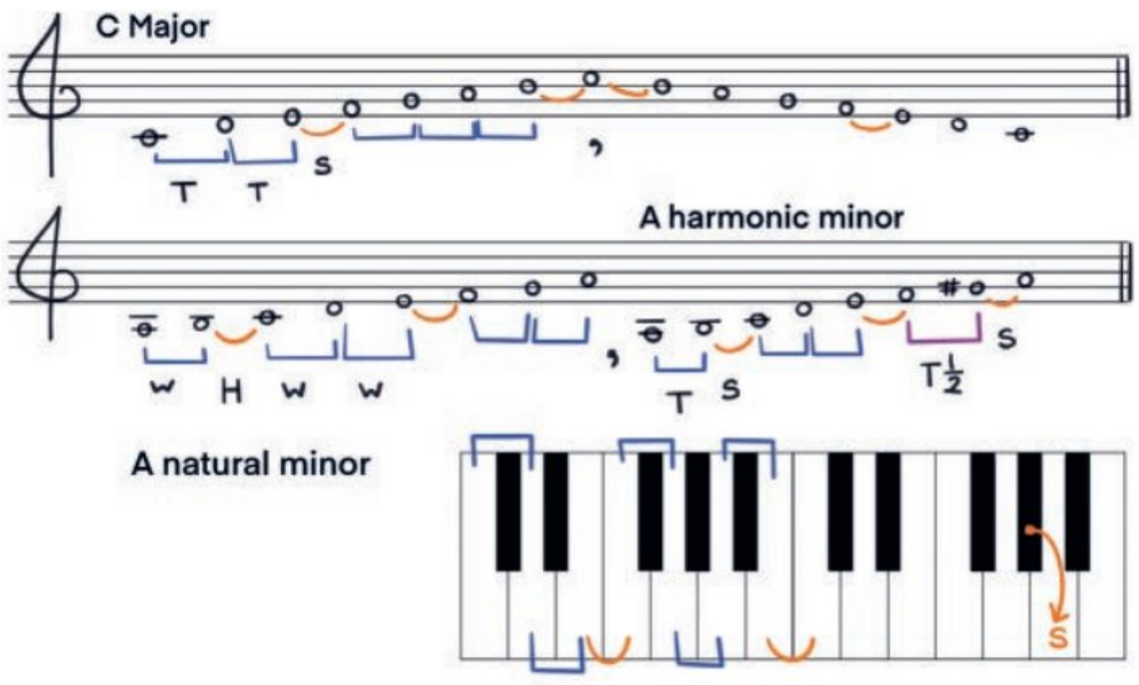


■ **Figure 3.13** Prolation ratios using A minor descending melody

Music exploration: Scales as formulas

A scale is simply a string of notes that ascends and descends in a particular pattern. You will need a starting note, and then you either step up one space (semitone / half-step) or two spaces (tone / whole tone) to the next note of the scale. There are actual formulas that you can use, and drawing a keyboard is the best way to visualise how this stepping process works.

1 Take turns with a partner playing though the scales in Figure 3.14 and discuss the 'sounds' they make. Which types of music would have this sound or **tone-colour**?
2 With a partner, notate different scales starting on different notes. All you have to do is count the steps to make sure they have the right formula.



■ **Figure 3.14** Major and minor scale formulas: Major is TTSTTTS, with natural minor TSTTSTT (or WWhWWWh and WhWWhWW)

ACTIVITY: Combining elements for a solo instrument

ATL

■ Creative thinking skills: Applying existing knowledge to generate new ideas, products or processes

'Elegy' is a classical guitar work by Štěpán Rak (b. 1945). Rak is a composer and professor of guitar at the Academy of Performing Arts in Prague. His works have a distinct approach to rhythm and melody that stems from his Czech heritage. The opening three measures of 'Elegy' are in Figure 3.15.

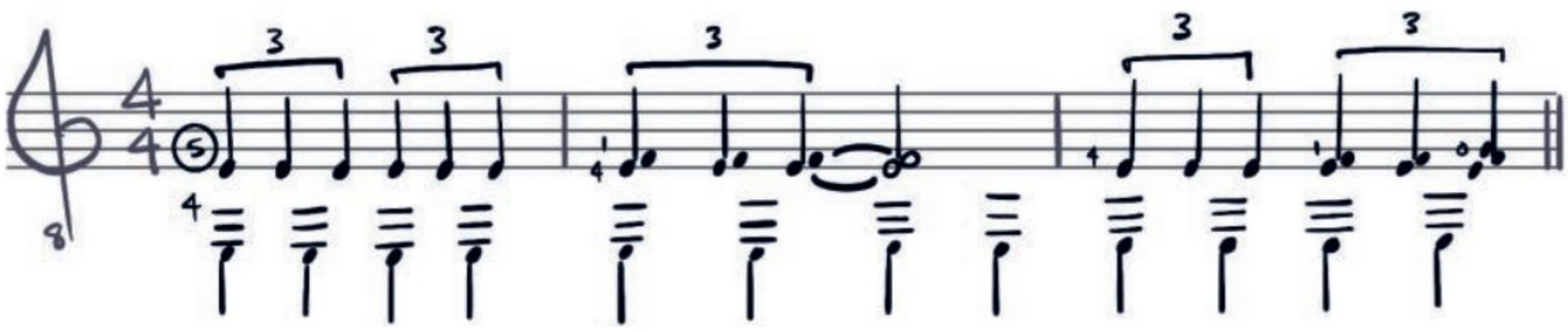
1 **What do you notice about the bass line (notes with stems going down)?**
2 **What is interesting about the combination of rhythms in both the bass and top parts (fingers tend to play the notes with stems going up)?**

You should see straight away Rak's repetition of one single low note (called a *pedal*) with groupings of three triplets on top (the numbers and circled numbers are finger and string directions). Being able to take the building blocks of music and compare them with vastly different works is a skill many professional musicians do on a daily basis.

As a final task, try to perform these measures on classroom instruments in pairs. Could you complete the piece by improvising the next few measures, building on the pattern in Figure 3.15?

Assessment opportunities

In this activity you have practised skills that are assessed using Criterion B: Developing skills and Criterion D: Responding.



■ **Figure 3.15** 'Elegy' by Štěpán Rak measures 1–3

What is a chord or chord extension?



■ **Figure 3.16** Chords being performed on guitar and piano

COLOUR–SYMBOL–IMAGE

ATL

■ Communication skills: Using and interpreting a range of discipline-specific terms and symbols

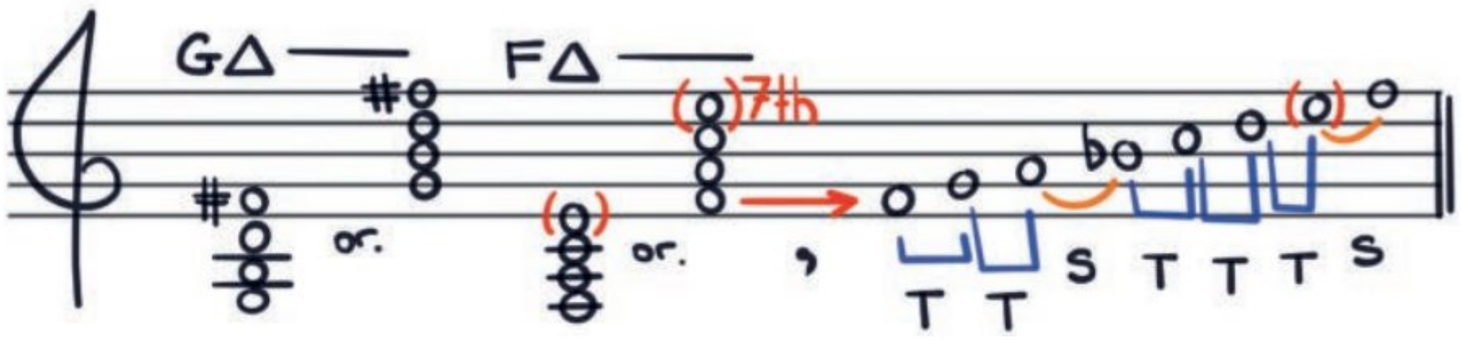
In the film *Inside Out* by Pixar, the opening music by Michael Giacchino (b. 1967) **presents** two distinct **chords**. These chords are known as a *G major 7th* and an *F major 7th*. Jazz musicians have their own symbols for these chords so that when they see them they know immediately what to play: GΔ and FΔ. What you should notice is that instead of the 3-note **triad** shapes, we now have 4-note chords. The 7th note of each scale (that is G A B C D E **F#**, and F G A B♭ C D **E**) has been added on top, forming what is called a major 7th chord.

You can actually add any note from the scale on top of a triad, and it will give you a chord **extension**!

As you listen to the track on the playlist, choose a **colour** that best represents what you feel. Secondly, choose a shape or **symbol** of your own that you can **use** to represent the two shifting chords.

Lastly, what **image** comes to mind when you hear this music?

Document all of this in your portfolio: The composer Michael Giacchino would have definitely gone through a similar exercise before he wrote this beautiful theme.



■ **Figure 3.17** Opening chords from the film 'Inside Out' by Michael Giacchino

CHORDS IN HISTORY

Musical exploration: What's in a chord?

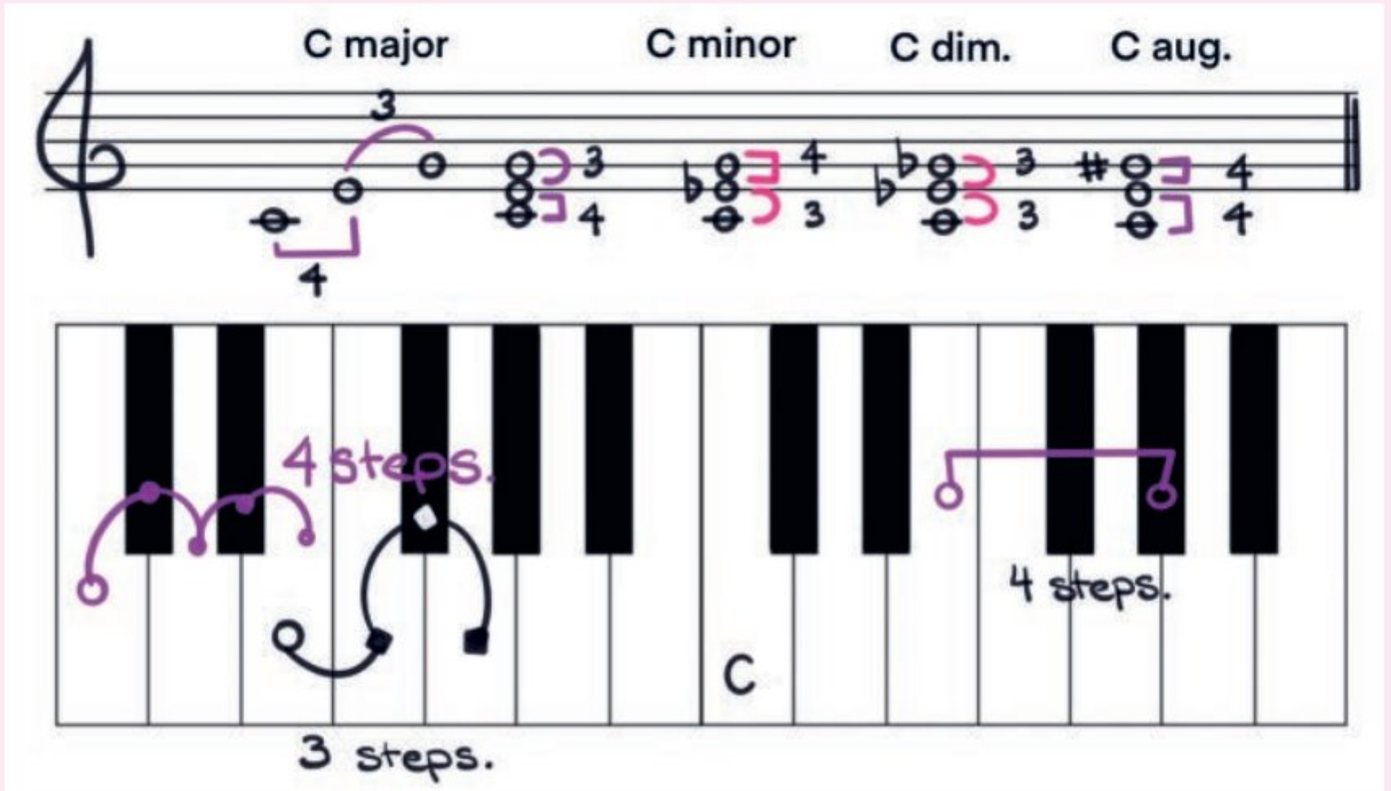
The formula for 'what is in a chord' is straightforward. To approach making and recognising four types of chords, you just need to be able to count to 3 or 4.

Using the chart in Figure 3.18, start with a note in treble or bass clef and count up the necessary steps.

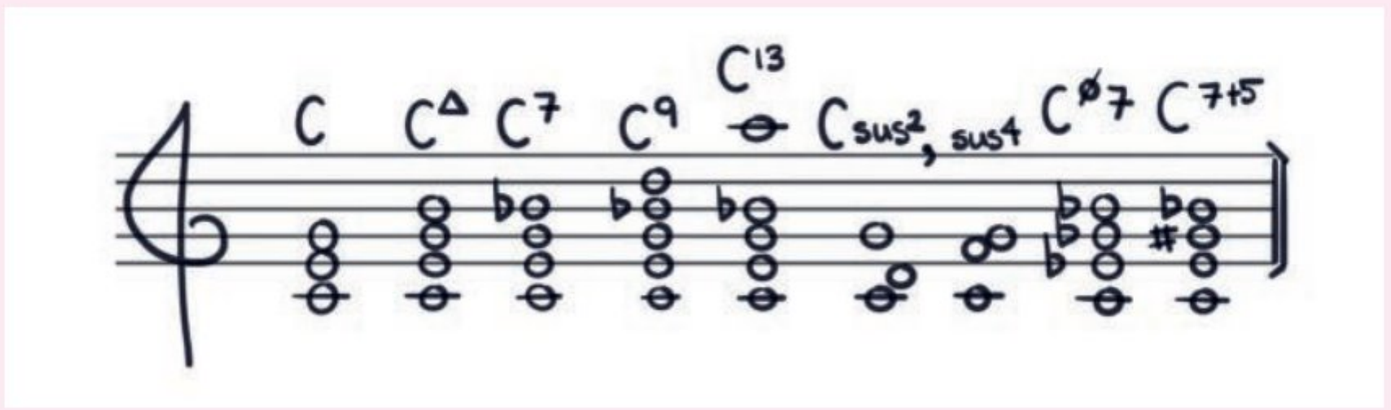
Hint

Drawing a keyboard to highlight the steps is recommended.

As you go through further chapters, use these formulas of semitones and tones (half steps and whole steps) to make your own chords – and just like Michael Giacchino, adding other notes from their scales turns them into extended chords!



■ **Figure 3.18** Making chords with the four main types of major, minor, diminished and augmented https://www.musictheory.net/lessons/40

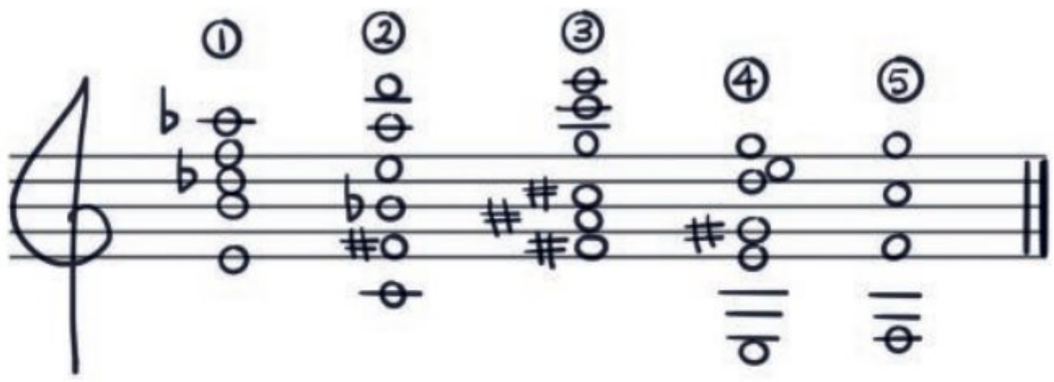


■ **Figure 3.19** Extended chord examples

EXTENSION

Changing chords in history

Along with what could be called 'normal' triads (major, minor, diminished and augmented), and then 'extended' chords that add notes of the scale on top of those triads (major 6th, major 9th, minor major 7th), composers in the 20th Century changed the perception of audiences through **developing** new tonal colours. These colours were often the result of clashing and dissonant combinations of notes. Try playing these new chords on your own instrument or as arpeggios.



■ **Figure 3.20 1** Strauss's 'Elektra Chord', **2** Scriabin's 'Mystic Chord', **3** Stravinsky's 'Petroushka Chord', **4** Jimi Hendrix's 'Purple Haze E7#9' or **5** 'Castles of Sand' Fsus2 chord

ACTIVITY: The metamorphosis of chords

ATL

- Reflection skills: Developing new skills, techniques and strategies for effective learning

Philip Glass (b. 1937) is a creative composer / performer. His works extend from film scores to operas to string quartets and more. Glass has **developed** an aural soundscape that is instantly recognisable because of the patterns he uses. Listen to the track 'Truman Sleeps' from his score for *The Truman Show* (1998) on the playlist. The **progression** is an **arpeggio** pattern built using the chords i-VI-III-V in the key of A minor. This series of chords, and the way they are played in rhythmic groupings of 3 against 2, is very 'Glass' (see Figure 3.21).

In this activity we will develop a similar progression of our own through experimenting with arpeggios and rhythms. Glass's piano **suite** *Metamorphosis* incorporates so much of his thinking that it is required listening when studying his compositional features.

1. **In your class, on any keyboard-like instrument, rehearse the Glass examples in the figures below.**
2. **As you play one chord after the other, watch how mostly one note changes between each chord. This is called *voicing* and it makes for smoother transitions.**
3. **After repeating the chords a few times, break them up by playing one note at a time in groups of quavers (8th notes) and quaver triplets (say *tri-po-let* to get the rhythm pattern smooth or *legato*).**

You have just performed your own arpeggios based on a work by Philip Glass! Now you need to **use** a program like GarageBand or SoundTrap to record your ideas. A student example is provided that they improvised based on Figure 3.21 to help get you started (see Figure 3.23).

Throughout this activity make notes, take screenshots and add details on what worked or what had to be changed.

Assessment opportunities

In this activity you have practised skills that are assessed using Criterion B: Developing skills and Criterion C: Thinking creatively.

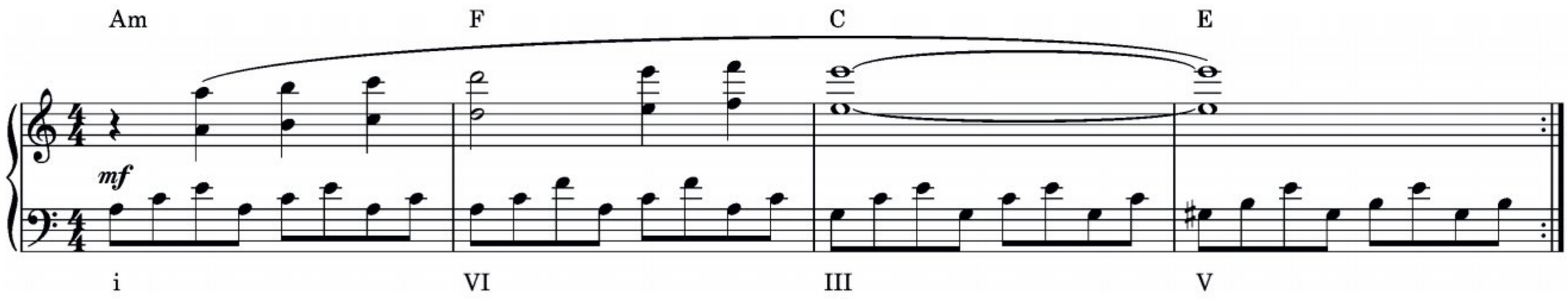


Figure 3.21 'Truman Sleeps' with the rising A minor-scale melody and 'Glass' chord progression.
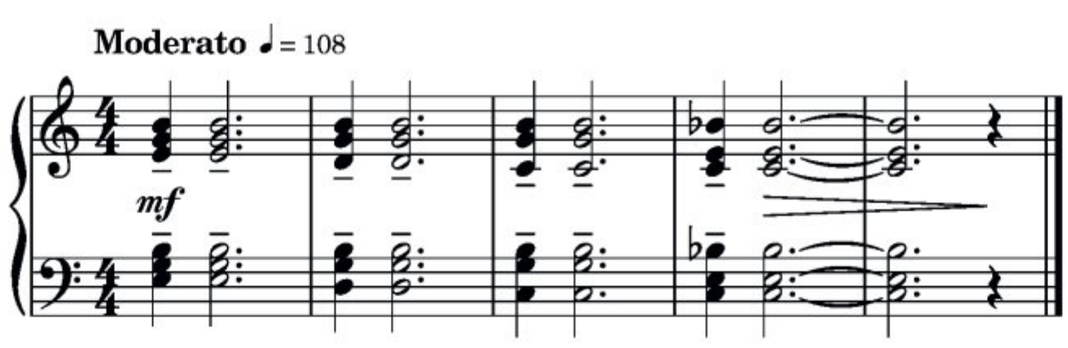


Figure 3.22 Opening of Philip Glass's *Metamorphosis* using chords with minimal changes

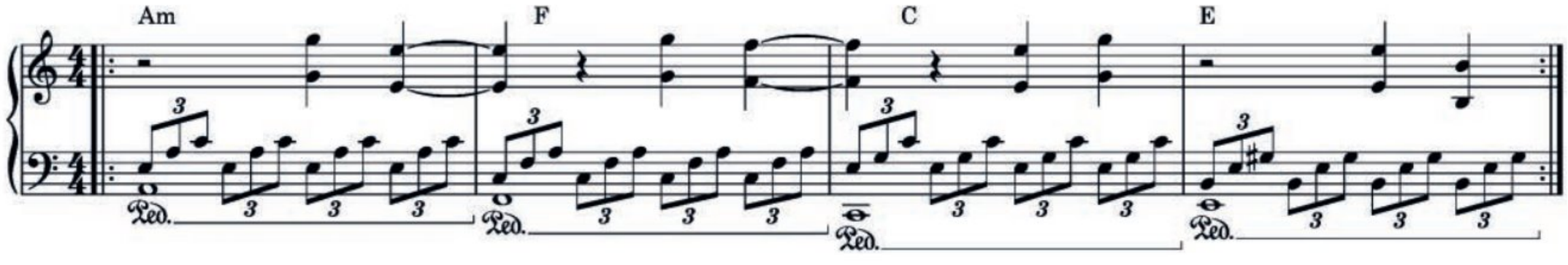


Figure 3.23 Student imitation of Glass progression and rhythms using triplets with octaves in the melody.

Which features define transformation in music?



■ **Figure 3.24**

STRING THEORY (PART 1)

In orchestral, chamber or even electronic / popular music, it is impossible to avoid what we call *strings*. From the film scores of Hans Zimmer to The Beatles' 'Eleanor Rigby', dramatic sounds from thrillers like Hitchcock's *Psycho* or the onomatopoeic sounds of Antonio Vivaldi's *Four Seasons*, it is important to understand how musicians transform their ideas with these instruments. Musically, to be creative with any idea, you need a solid form first, such as a clear melody or rhythmic pattern. From there, that melody can be *chopped up* (**fragmented**), *lengthened* (**augmented**), *shortened* (**diminuted**), played *higher or lower* (**sequenced**) or even played *backwards* (**retrograde**).

Errollyn Wallen (b. 1958) is a '… renaissance woman of contemporary British music. She is a respected singer-songwriter of pop-influenced songs [and] a composer of contemporary new music'. Her score for strings entitled 'Photography' (2007) is a perfect example of imaginative string-writing. Before you complete the activity to the right, watch and listen to her work on YouTube set to animated jellybeans: **https://youtu.be/roapcMRiYfc**

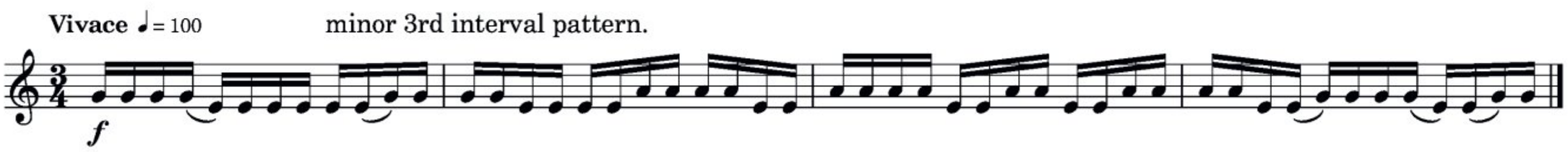
CREATIVE QUESTIONS

1 **Using the topic of 'transformation', brainstorm a list of questions you have about the 'Photography' piece.**
2 **Look over your list and transform some of the questions into new questions that challenge your imagination, for example:**
 - a **What would it be like if…**
 - b **How would it be different if…**
 - c **Suppose that…**
 - d **What would change if…**
3 **Now draw a small shape in your portfolio (such as a line or squiggle). This is a single musical idea that could be played on a violin. Now draw a series of other shapes using your first line / squiggle as the main starter idea. What happens? How many ways did your first line / squiggle change? Could you use some of the musical transformation ideas discussed in this section?**
4 **What new ideas do you have about the topic that you didn't have before?**

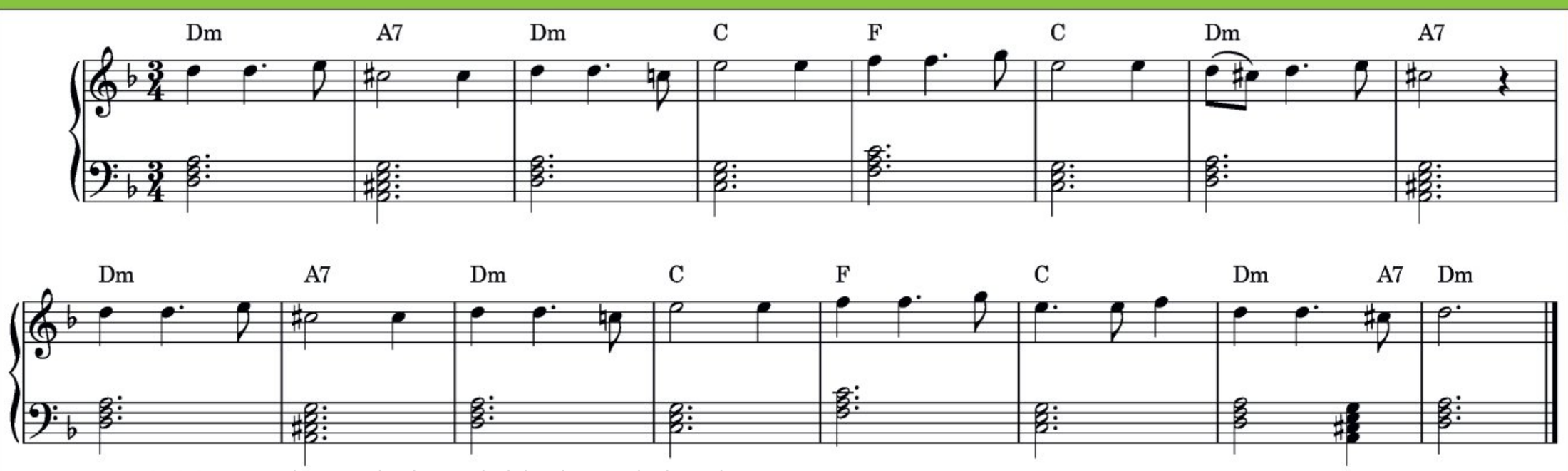
Hint

Wallen's score is available for purchase to perform in your ensemble or study further.

Going back as far as Ancient Egypt and Greece, such instruments were used as the accompaniment to dramas, stories and songs. String instruments have undergone many *physical* transformations, from the vihuela to the lute to the guitar, or the viola da gamba (viol family) to the violin, viola and violoncello that we know today. But did you know there was a form of music that was centred around the idea of transformation? It is called **theme and variations**.



■ **Figure 3.25** Opening melody from 'Photography' (violin mm1–4)



■ **Figure 3.26** 'La Folia' melody with block triad chords

Archangelo Corelli (1653–1713) wrote his violin **sonata** in *D minor Op. 5 No.12* 'La Folia' based on an ancient musical theme and progression. This progression is thought to have originated in Spain during the Renaissance and has since been 'creatively borrowed' by many different composers. In the grid below, each box represents a musical measure in 4/4.

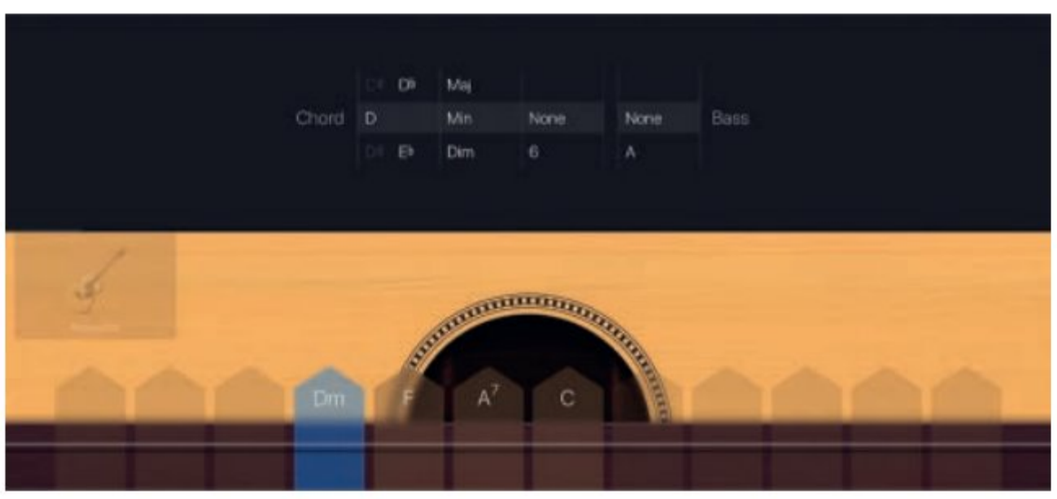
'La Folia' follows a simple 8-measure pattern in two halves, and its melody has a repeated pattern of its own. Corelli uses this main theme to develop a series of variations in which he alters the rhythmic and melodic material while keeping the same formal structure. You can view a live performance on YouTube at: **https://youtu.be/C4m1KHjp03M**, or listen to it on the playlist.

Dm (i)	A^7 (V^7)	Dm (i)	C (VII)	F (III)	C (VII)	Dm (i)	A^7 (V^7)
Dm (i)	A^7 (V^7)	Dm (i)	C (VII)	F (III)	C (VII)	Dm (i) A^7 (V^7)	Dm (i)

ACTIVITY: Finding the thread

■ ATL

■ Communication skills: Making inferences and drawing conclusions



■ **Figure 3.27** iPad 'La Folia' chords for performance

1 a **In your classroom, perform the chord progression on a guitar, piano or device such as the iPad with its SMART performance features.**

b **Now try playing or singing the melody in solfeggio over the top. What do you notice about the chords and melody notes?**

Using the previous exercise of transforming a drawn line or squiggle, we will now change the melody notes over the repeated chord progression. For each of the ideas you create, experiment by recording it live. Sing or play each one into software like GarageBand or SoundTrap.

2 a **Try repeating just one note in each measure. What effect does this create?**

b **Now repeat only Lah (D) and Ti (E), alternating in each measure as quavers (8th notes). What effect does this create?**

c **Lastly, play the notes A<G (major 2nd) as an ostinato over the chords, changing at times to the D>E (major 2nd) pairing. What effect does this create?**

By borrowing a progression and **creating** your own variations, you have transformed the piece into something original. Don't forget: this is 'creative borrowing', and it works!

◆ Assessment opportunities

In this activity you have practised skills that are assessed using Criterion A: Knowing and understanding and Criterion B: Developing skills.

How do artists approach change?



■ **Figure 3.28**

WHAT MAKES YOU SAY THAT?

So far, we have looked at different methods of reusing past musical ideas, and then how to repeat and transform them. But what is going on? Is this really change?

Using the previous sections and activities, draw a Venn diagram showing past and new musical transformations. Include the repertoire studied so far as well as terms such as *chords*, *progressions*, *repetition*, and so on. In the middle section is where we will find *common* features between the old and new way of **presenting** music. Complete this diagram and discuss it with a friend.

What did you discover in the middle section of the Venn diagram? Did you find similar approaches to making, performing or writing music? What were your findings on the ways music was presented in the past to now? Write down your findings in your portfolio, as we prepare to examine more contemporary examples.

STRING THEORY (PART 2)

ACTIVITY: Comparing styles over time

■ ATL

■ Media literacy skills: Understanding the impact of media representations and modes of presentation

In this activity, we will be comparing and contrasting the chord progressions and repeated patterns of various pop–rock songs from the 60s, 70s, 80s and 90s. Keeping the Venn diagram from above in mind, this will give you further evidence of change in how the music is repeated and how it is **presented**. Each piece will be broken into three sections, with areas to engage with:

The Shadows: *Apache*

The Shadows were an **instrumental** rock group who recorded their UK chart-topping *Apache* in 1960. As pioneers of the four-member instrumental format (before The Beatles), the band consisted of lead, rhythm and bass guitar, plus drums. Their style consisted of a melodic-rock-ensemble associated with the surf-rock sound of the 60s.
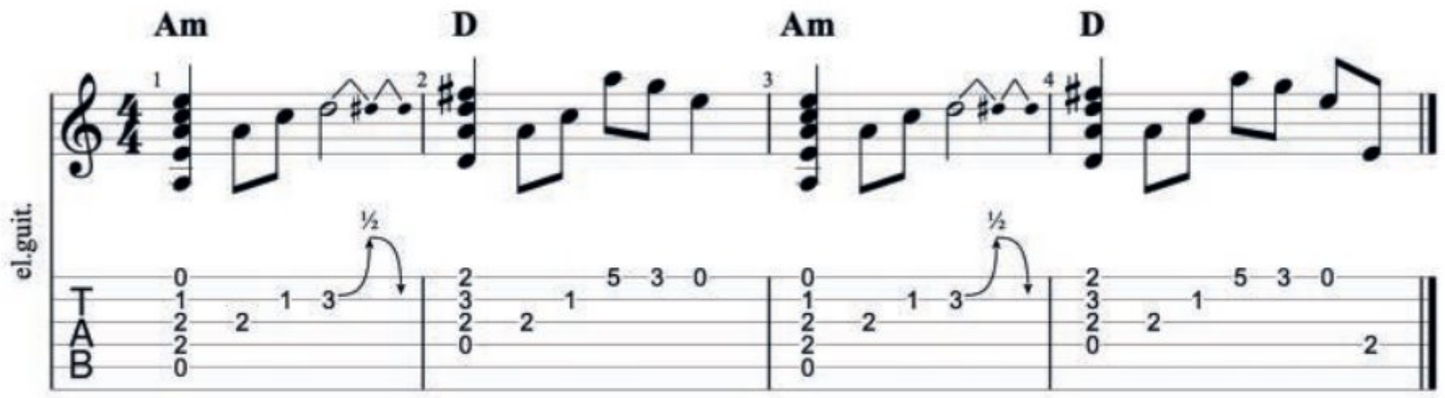
Chords: The chords used in this piece are all triads, except for one extended 7th chord in the chorus:

Intro: Am	D	Am	D	[Verse: Am	D	Am	Am]
Chorus: F	G	Am	Am	F	G	E	Cmaj7

Repetition: Ask yourself: What repeats? Is it just the chords, or is there a melody or a riff (repeated melodic pattern), bass line or drum pattern?

Structure: As you listen to the piece, **use** the chord structure above to sketch out where instrumental layers stop and start. Is there a layer that 'glues' the piece together? We call this the *internal structure* of a work. ➤

Try performing the opening theme over the triads of Am and D on your instruments.



■ **Figure 3.29** Opening of 'Apache' made in the software Guitar Pro 7.5

Fleetwood Mac: 'The Chain'

Recorded on their best-selling album *Rumours* in 1976, 'The Chain' began as a combination of a bass riff (heard in the outro) and a bluesy chord progression.

Chords: The chords used are:

Intro: Em	A	Bm / Am	Em	Em	A	Bm / Am	Em
Chorus: Am	Am	Em / C	D	Am	Am	Em / C	D

Repetition: Ask yourself: What repeats? Have you seen these triads before? Is there a melody that repeats after four measures? Or a drum pattern and guitar riff (repeated pattern)?

Structure: As you listen to the piece, use the chord structure above to sketch out where instrumental layers stop and start. Is there a pattern?

Try playing the chords taking note of their 4–8 bar structures. You could use ukuleles, guitars, even devices.



■ **Figure 3.30** GarageBand chord layout following the chord grid

Discuss: In comparing 'Apache' to 'The Chain', what do you think is different musically?

U2: 'Where The Streets Have No Name'

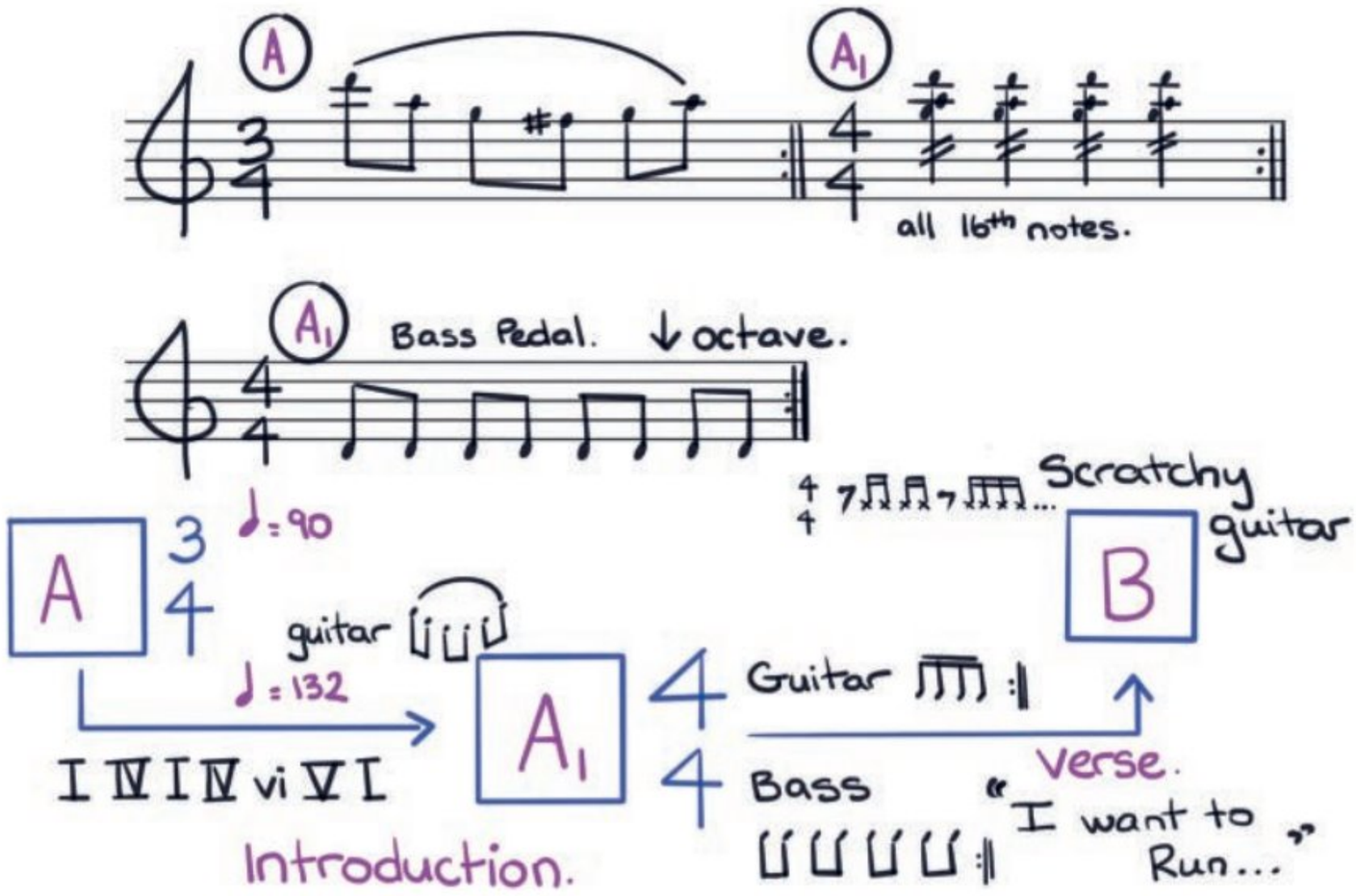
U2's album *The Joshua Tree* from 1987 is a must-listen for repeated chords, melody lines and overlapping textures. This track, 'Where The Streets Have No Name', also uses repeated triads with an opening guitar arpeggio and bass pattern.

Chords: The chords for U2's chorus are centred on the key of D major using chords I-IV-vi and V, just like the organ introduction.

Chorus: D	D	D	D	G	G	G	G
Bm	Bm	A	A	D	D	D	D

Repetition: You will hear a lot of repetition in this piece, but try to focus on the instruments. Can you describe the patterns they play? Or better yet, draw sketches of their patterns? See Figure 3.31.

Structure: What do you think is the 'glue' that holds this piece together?



■ **Figure 3.31** 'Where The Streets Have No Name' example structure sketch

Nirvana: 'Come As You Are'

This song has reached listeners across generations with its laid-back guitar riff that moves between two notes the **interval** of a major 2nd apart (low D to a low E).

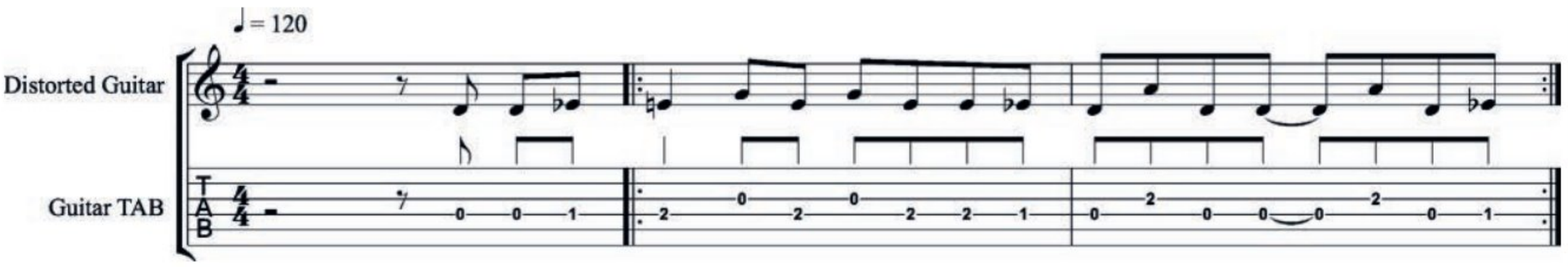
Chords: The chords alternate between a minor triad and a major one throughout the song:

Verse: Em	D	Em	D	Em	D	Em	D
Bridge: Am	C	Am	C	Am	C	Am	C

Repetition: What repeats in each layer of sound? Can you **identify** them all?

Structure: The two alternating chord patterns form the main structure of this piece. But what else adds to keeping it 'glued' together?

Perform the opening riff with the chords of Em and D on your instruments.



■ **Figure 3.32** 'Come As You Are' introduction riff

Revisit the Venn diagram from the start of this section and add in all the details from these works you've studied. Ask yourself: What repeated and what was the 'glue' holding each piece together?

◆ Assessment opportunities

In this activity you have practised skills that are assessed using Criterion B: Developing skills, Criterion C: Thinking creatively and Criterion D: Responding.

How can an artistic intention be viewed as innovative?



■ **Figure 3.33**

THINKING THROUGH CHANGE

Portfolio presentation

The 12-tone technique

In the 20th Century, composers, conductors and performers began to experiment with new ideas that challenged the traditional methods of how music was expressed and presented. One method combined the transformation of musical pitches into self-generating rows of notes, called the **12-tone row** technique. Igor Stravinsky used it in his rendition of Edward Leer's nonsense poem 'The Owl and the Pussy Cat'. In 1966, the composer scored it for soprano and a one-voice piano-line, doubled at the octave. Stravinsky uses elements of *canon* and *imitation* within the work. You can listen to it on the playlist or with a score on YouTube here: **https://youtu.be/W2AJzjASkZQ**

1 To write in a 12-tone row style, the composer would create a random row of pitches using the 12 tones of the **chromatic** scale (pitch material C-C#-D-D#-E-F-F#-G-G#-A-A#-B, 0-11, and so on). This could be done with dice, or today a computer. Stravinsky's row is 2-4-11-1-10-8-7-9-0-3-6-5.

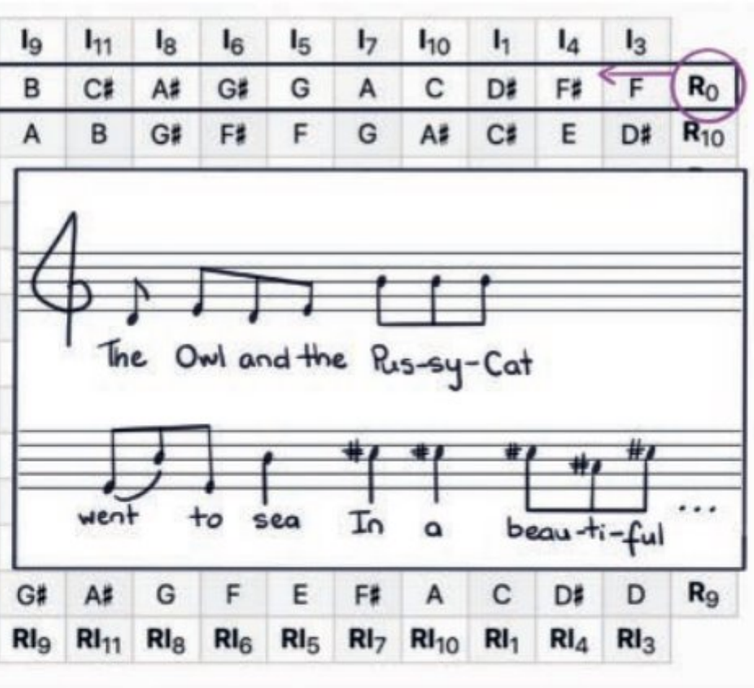
2 By adding in the first or *prime row* (*P0*), it can also be played backwards (called *retrograde*), turned upside down (called **inversion**) and that turned backwards (called **retrograde inversion**).

3 The other rows within what is called a *matrix* would be filled out, giving many other possible note combinations.

4 A work would generally start with the prime row (see Stravinsky's opening line below, reading left to right):

Is this innovative or creative? What makes the *process* innovative? How does this make the final product more expressive?

	I_0	I_2	I_9	I_{11}	I_8	I_6	I_5	I_7	I_{10}	I_1	I_4	I_3	
P_0	D	E	B	C♯	A♯	G♯	G	A	C	D♯	F♯	F	R_0
P_{10}	C	D	A	B	G♯	F♯	F	G	A♯	C♯	E	D♯	R_{10}
P_3	F	G											
P_1	D♯	F											
P_4	F♯	G♯											
P_6	G♯	A♯											
P_7	A	B											
P_5	G	A											
P_2	E	F♯											
P_{11}	C♯	D♯											
P_8	A♯	C											
P_9	B	C♯	G♯	A♯	G	F	E	F♯	A	C	D♯	D	R_9
	RI_0	RI_2	RI_9	RI_{11}	RI_8	RI_6	RI_5	RI_7	RI_{10}	RI_1	RI_4	RI_3	



■ **Figure 3.34** The 12-tone row matrix used in 'The Owl and the Pussy Cat' (first vocal line follows primary row 0)

EXTENSION

Writing like Stravinsky to a poem

Using the website **www.musictheory.net/calculators/matrix**, you can generate your own 12-tone row. **Create** one of your own, then using the first or prime row (P0), play a melody using Stravinsky's **rhythmic material** from 'The Owl and the Pussy Cat'. How does it sound? Could you set this melody to a poem of your own choosing? Add your creations to your portfolio and **explore** more texts using this technique.

ACTIVITY: Stravinsky, *Psycho* and *The Mummy*

ATL

- Collaboration skills: Listening actively to other perspectives and ideas

It may seem strange forming a connection with Stravinsky's music to the ballet *The Rite of Spring*, Bernard Herrmann's music for the film *Psycho* and Gerry Goldsmith's music to the film *The Mummy*, but when you look at how rhythmic layers and chords are used in all three, an evolution of style becomes apparent. Get your portfolio ready and listen to each track mentioned in this activity on the playlist.

1 Igor Stravinsky's ballet *The Rite of Spring* premiered in Paris on 29 May 1913 to a terrible riot. As the story goes, the audience were screaming so loud in protest that the dancers of the Russian ballet, could not hear the orchestra performing in front of them. Why? Many have speculated it was the combination of dissonant chords and irregular rhythms! Stravinsky takes a regular set of quavers (8th notes) and uses accents with heavy strings to create a dynamic effect.
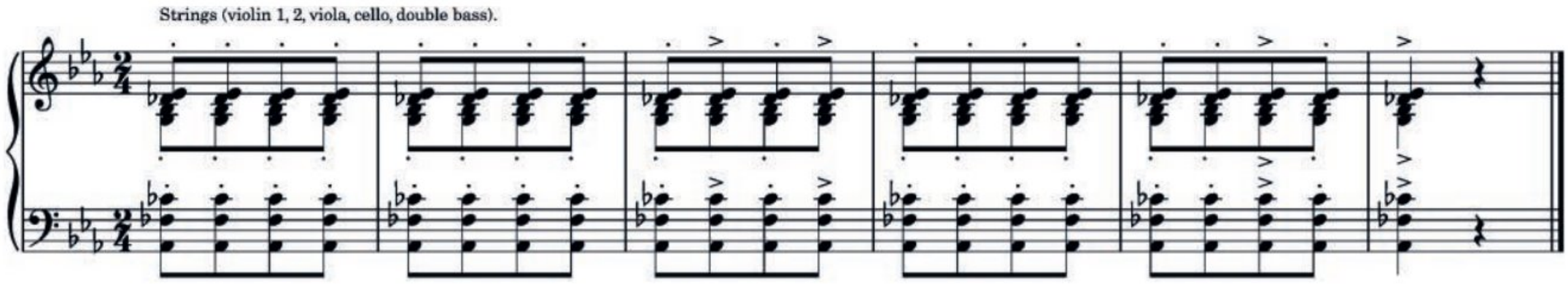


Figure 3.35 Rhythms from *The Rite of Spring: Part 1*. Notice the staccato and accents as they drive the dissonant chord forwards.

2 Bernard Herrmann (1911–1975) wrote for strings in the thriller *Psycho* by Alfred Hitchcock. The patterns expressed in his score for *Psycho* could well be argued as an evolution from those of Stravinsky's. The main rhythmic element is a minor–major 7th chord (mΔ7) that dramatically stabs into the air. This chord is perfectly suited to a thriller. The constant accented pulses work very well with the space Herrmann leaves between repetitions.
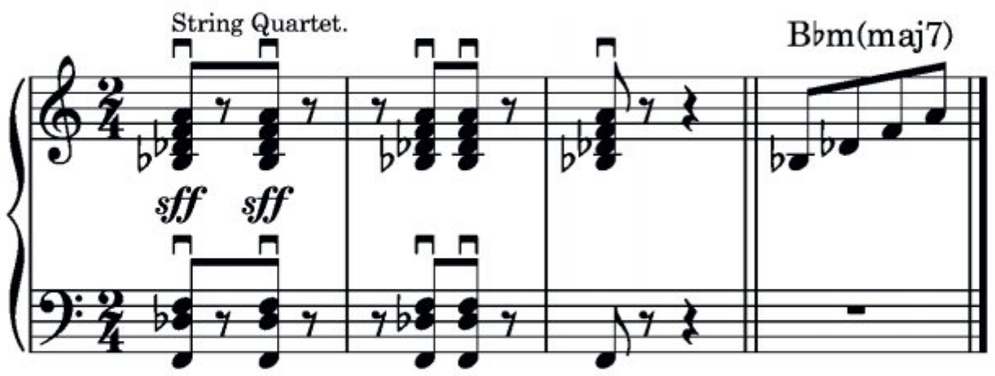


Figure 3.36 Opening chord from *Psycho* scored by Bernard Herrmann
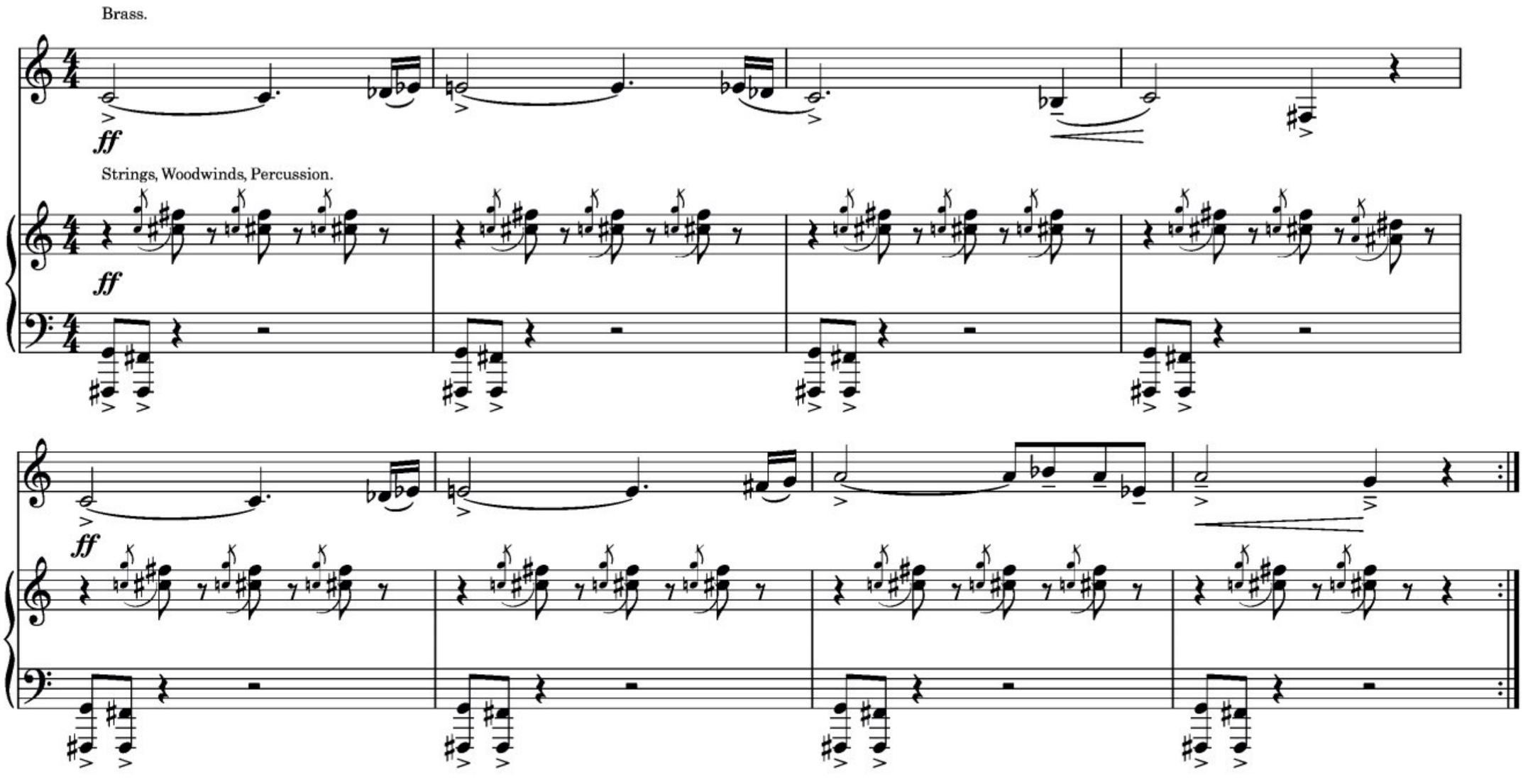
3 **Jerry Goldsmith (1929–2004) composed his score to the 1999 film *The Mummy* using an interesting set of musical layers including strings, brass and heavy percussion. They each have a different rhythm and fit together like a puzzle. They have a dissonant and powerful effect because of the appoggiaturas, the brass melody and percussive accents similar to *Psycho*.**

- **a** **Count and perform using body percussion the rhythms from Stravinsky's *The Rite of Spring*.**
- **b** **Count and perform using body percussion, the rhythms from *Psycho*.**
- **c** **Listen to Jerry Goldsmith's score for the film *The Mummy* on the playlist. Document in your portfolio what you can identify and describe about each layer presented in the transcribed example.**

Discuss: How does Goldsmith's music compare to Stravinsky's or Herrmann's?

Assessment opportunities

In this activity you have practised skills that are assessed using Criterion A: Knowledge and understanding and Criterion D: Responding.

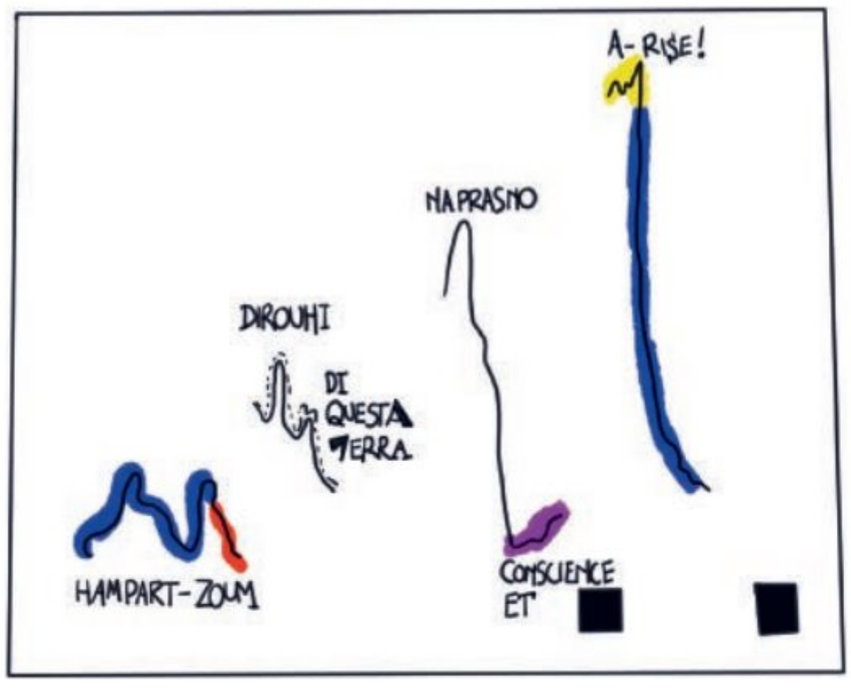


■ **Figure 3.37** Goldsmith's *The Mummy* rhythmic layers (approximately 2'06 into the playlist track)

DISCUSS: What does innovation look like, then and now?

John Cage was a renowned figure in the movements of experimentation during the 60s and 70s. He contributed a great deal to our thinking when considering what is sound and what is the process of listening. Cage's *Aria* (1958), for example, gives us a complete description or key at the start of the work, because it describes, **outlines**, even colours, the music like a painting. What do you think of when you listen to this piece or view the score? What do the colours or shapes represent for performance?

We now live in a musical age where beats are made using graphical grids, yet the basic vocabulary of music remains. What does this tell us about innovation?



■ **Figure 3.38** Excerpt from John Cage's *Aria*

To what extent does the expression of other cultures influence change?

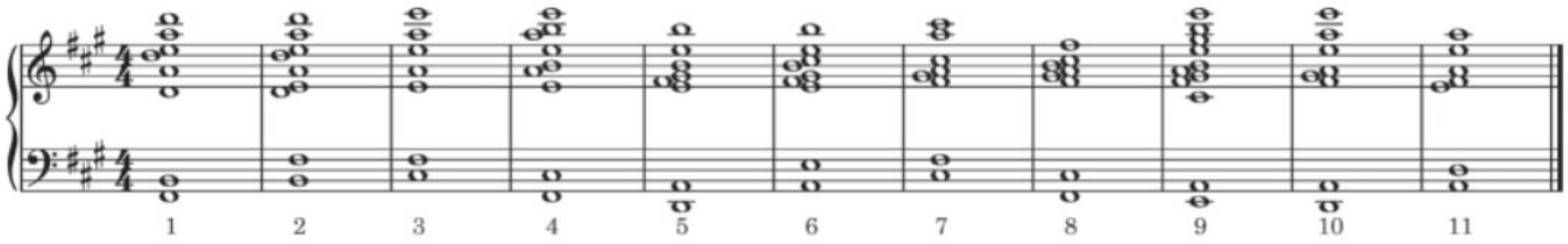
THINK–PAIR–SHARE

The *Exposition Universelle* in Paris of 1900 gathered the world to **present** inventions and cultures that were to usher in a new century of innovation. Composer Claude Debussy (1862–1918), having already been inspired by Javanese Gamelan at the 1889 World Fair, now was re-introduced to Japanese music. Japanese art had infiltrated Paris with the prints of Hokusai and other masters of the *ukiyo-e* school. This influence is formally referred to as *Japonisme*. Whereas Debussy did not like being referred to as an impressionist, pianist Noriko Ogawa suggests that '… the most Japanese of his works, *Poissons d'or*, … [was] directly inspired by exquisitely wrought images on a Japanese lacquer cabinet depicting koi carp'.

As you listen to this piece on the playlist, what do you **think** gives the impression of water, goldfish or an eastern influence?

Steve Reich's *Music for 18 Musicians*, outlines other methods of exotic influence. There are sounds of the Gamelan from Indonesia, African rhythm-type calls, insect or animal noises, as well as urban landscape effects. The entire piece uses Reich's *phasing* concept and is formally structured around 11 chords, **exploring** their sonority or tone-colour (or how they 'sound').

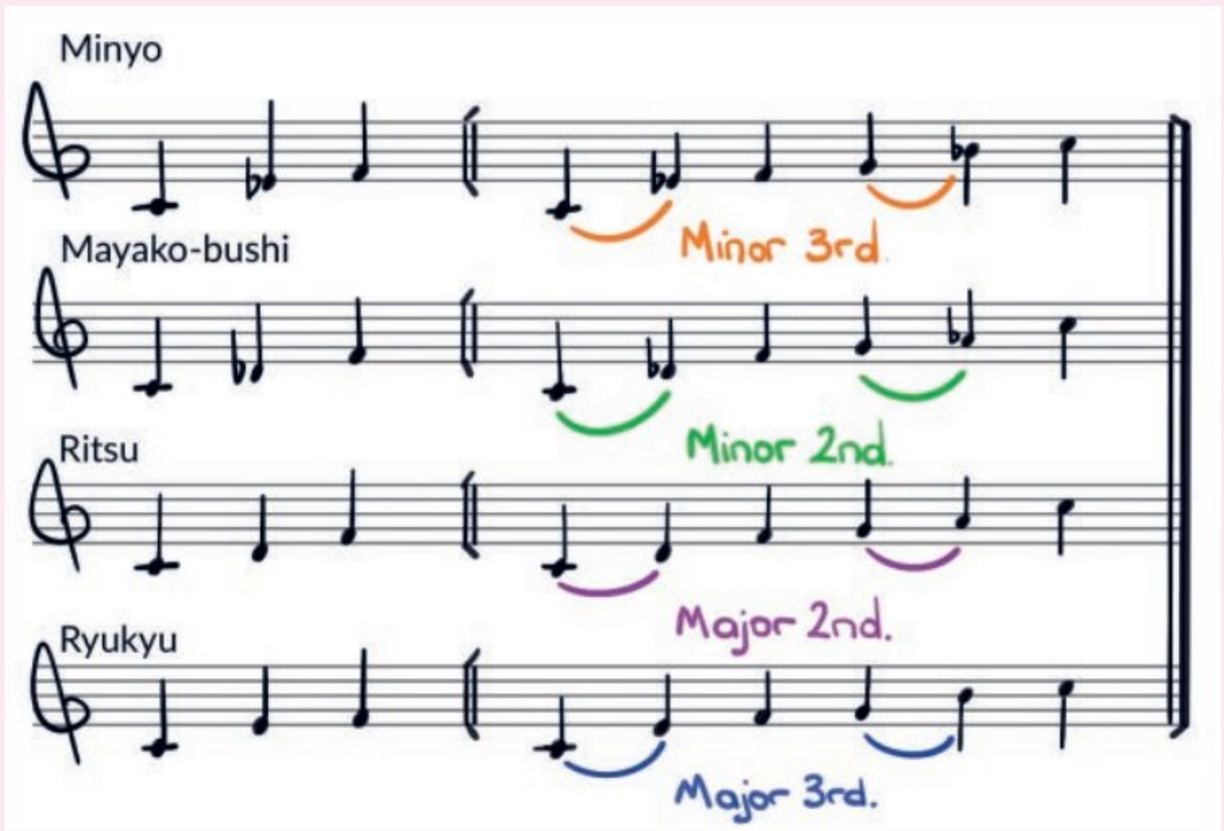
After listening to the work on the playlist, **pair** with a friend and share any identical differences between the two pieces.



■ **Figure 3.39** 11 chords that Steve Reich based his work upon
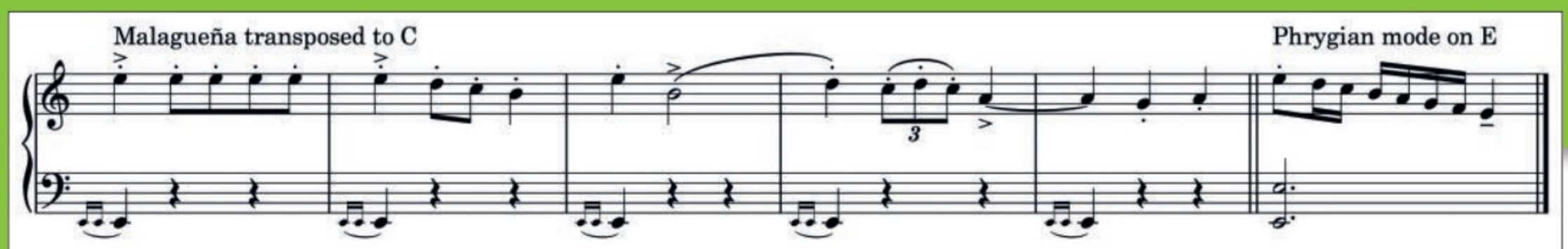
Music exploration: The modes of Japan

In a previous chapter we talked about scales as patterns that go up and down by tones or semitones (half-steps and whole steps). However, in Japanese music, a musicologist named Fumio Koizumi theorised that most Japanese traditional music was framed around the interval of a perfect fourth (P4th). What this meant was that four main modes could be presented in various combinations to provide typically Japanese-sounding scales.
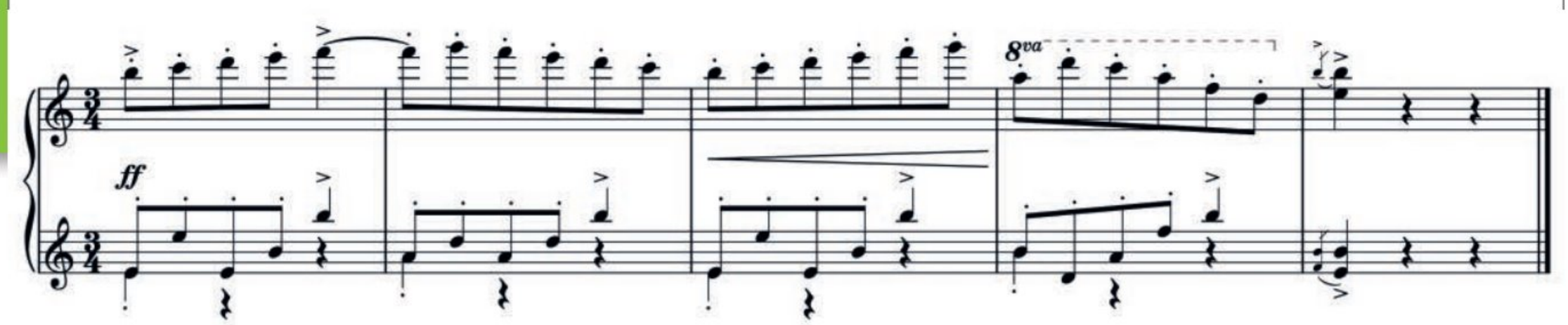


■ **Figure 3.40** Japanese modes as suggested by musicologist Fumio Koizumi.

Try singing or playing these on your instrument and listening to the steps in between the notes. These simple interval steps provide yet another pathway for changing the direction of your music.



■ **Figure 3.41** Malagueña by Ravel with repeating melodic and bass-line patterns using Phrygian mode.



■ **Figure 3.42** De Falla's Andaluza with octave pedal centred around 'E' mm5–8

SPANISH MUSIC IN PARIS

What makes something sound Spanish? Is it a musical phrase? Or a set of notes played in the correct order? You may think you know because in our connected world the sounds of other cultures are everywhere. But at the Paris Conservatoire in 1905, young composer Maurice Ravel was denied first place in the Prix de Rome (France's most important award for young composers) because it was speculated that Ravel had become influenced by music that was leading him away from the conventions of the previous school of thought. Imagine what he could have made with the changes in global music and technology today!

Ravel was known to favour the **Phrygian mode** when writing Spanish music, as well as traditional dances. In his *Rapsodie Espagnole*, composed in 1907, the prelude is based on what the minimalists of the 20th Century would later use; a repeated descending phrase of 4 notes. Then his second movement *Malagueña* is based on a Spanish dance, and starts with a fantastic bass line leading up to percussive sounds, and a trumpet theme using the Phrygian mode.

You can play Figure 3.41 yourself on your instruments, but type it into a program like MuseScore to see the way it moves through the Spanish-sounding Phrygian mode.

At the same time, composer Manuel De Falla's (1876–1946) *Four Spanish Pieces* were performed in Paris 1909. Its fourth movement 'IV. Andaluza' has a characteristic Spanish-sounding introduction built upon an E pedal and the E Phrygian mode seen in Figure 3.42.

ACTIVITY: Spanish music in Paris

■ ATL

■ Reflection skills: Demonstrating flexibility in the selection and use of learning strategies

Could you take the Phrygrian mode, and a pedal, to **create** your own Spanish-influenced work? **Use** the following hints to build it step by step:

1. **With a friend playing a rhythmic pulse on E, improvise on your instrument with the notes outlined in Figures 3.41 and 3.42.**
2. **Create a phrase of two measures as a question, and then two measures as an answer.**
3. **Make sure you experiment with the Phrygian mode on E with each phrase.**

Document your creation in MuseScore or devices to add to your portfolio, including research on modes **https://blog.landr.com/music-modes/**

◆ Assessment opportunities

In this activity you have practised skills that are assessed using Criterion C: Thinking creatively and Criterion D: Responding.

What forms of change exist in music?



■ **Figure 3.43**

CONNECT–EXTEND–CHALLENGE

What do The Beatles, Beethoven and artificial intelligence (AI) have in common?

In an article entitled 'Here's what it sounds like when artificial intelligence learns to play "Ode To Joy" in the style of EDM, Brazilian guitar, and The Beatles' "Penny Lane"', scientists at the Sony Computer Science Laboratory in Paris were challenged to re-**orchestrate** Beethoven's 'Ode To Joy' using AI. You can hear the final version here:**https://techcrunch.com/2016/04/29/paul-mccartificial-intelligence**

How can we take this experiment and put it into an approach we would understand? **Using** techniques or devices such as repetition, prolation, sequence, chord extensions or world-style influences, the original material you perform can be 'altered'. It still retains the sound or memory of the original, but in a new setting or context. Answer the following reflective questions in your portfolio.

Connect: How is the concept of change, as **presented**, connected to what you already knew?

Extend: What new ideas have you encountered that have pushed your thinking in new directions?

Challenge: What is still challenging for you? What questions, wonderings or puzzles do you now have?
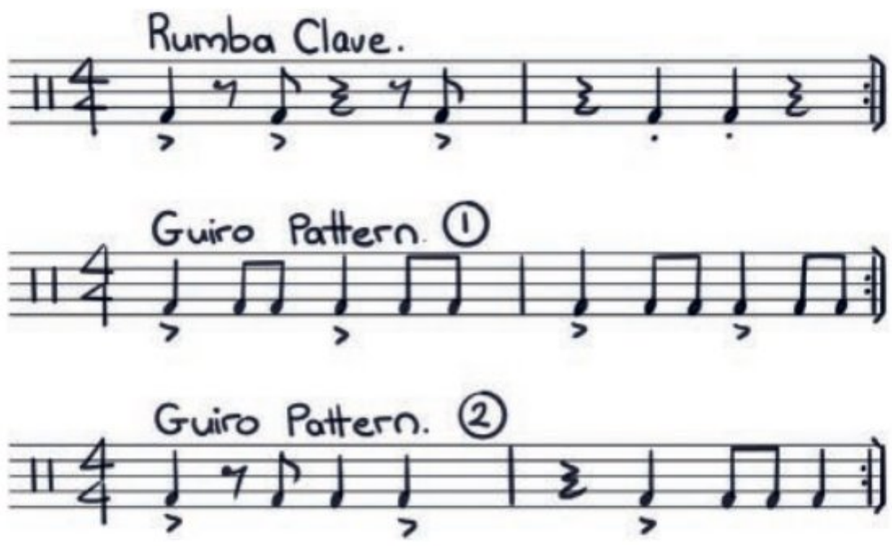
THE BEATLES, BEETHOVEN AND THE BAROQUE ERA

Portfolio presentation

A blend of styles

Today on YouTube you can watch as artists and producers take famous samples and create weird and wonderful works from them: often with musical instruments that look like small space-ship controls. However, learning to recognise those rhythms, is a major part of the remixing / blending / re-orchestrating experience. In Cuba, there are many musical styles that artists spend years learning to recognise and perform, such as Son, Cha cha, and Rhumba. They have different rhythmic groupings and clave patterns and each one **locks into** the groove a bit differently. To the right are two versions of 'Hey Jude' by The Beatles. Take note of how the change of a single rhythmic focus can transform a well-known song into something different.

Watch video number one and pay attention to the clave / trumpet player on the right. He is performing a rhumba clave that adds a heavily **syncopated** pulse to the song: **https://youtu.be/AMJmFP-ix14**



■ **Figure 3.44** Rumba clave with two different guiro rhythmic patterns

Video number two has a brilliant setting of the ending to 'Hey Jude' (the 'na na' part) with flute solo and a guiro (the scraped instrument) rhythm that creates continual forward movement in the performance: **https://youtu.be/E3w1vIddPbs**

In your portfolio, write a short response that describes how each ensemble presents 'Hey Jude'. Which one is more syncopated (off the beat) and why?

ACTIVITY: The Beatles go Baroque

ATL

- Media literacy skills: Locating, organising, analysing, evaluating, synthesising and ethically using information from a variety of sources and media (including digital social media and online networks)

In this activity you are going to remix the ending of 'Hey Jude' in your own style, but after considering one more vital aspect of changing the music; the structure.

F (I)	E♭ (♭VII)	B♭ (IV)	F (I)

An **arranger** is someone who takes an existing piece of music and alters it to fit within a new style. Yet arrangers spend a lot of time considering the structural elements of other genres before they **create** something new. For example, you would need to know all about the internal patterns and how they piece together in dubstep or future bass, before you could write an arrangement in either of those genres.

Listen to 'Hey Jude' as a Baroque-era *polonaise* on the playlist. In the Baroque era, musicians were aware of certain dance forms, their **time signatures**, their internal patterns and 'what' to repeat. The polonaise is a 17th Century dance in 3/4 time, usually marked with a quaver (8th note) followed by two semi-quavers (16th notes). Can you hear the 3/4 pulse and rhythms in the piece on the playlist?

Your mission is to pick any style of music that you would like to turn 'Hey Jude' into. You can **use** MuseScore or Symphony Pro to transfer the notation from this page and start adding new rhythms, and then record them using GarageBand or SoundTrap.

1. **Choose a style of music, such as the cha-cha, reggae, dubstep or polonaise.**
2. **Research the patterns of style, how they are performed and what they repeat.**
3. **Record the main rhythmic elements into software such as GarageBand or SoundTrap.**
4. **Perform or notate in the chords and melody for the ending of 'Hey Jude'. You will need a few tries, so keep listening and playing. Working with a partner is a great way to collaborate on recording projects.**
5. **Make a final recording or score, and label which elements belonged to The Beatles, and which elements you added from another genre.**

Hint

Don't just place the melody into a new instrument. Use the techniques we have discussed to alter it slightly, so that it fits within the new genre. If you have to remove parts, then do that too.

Assessment opportunities

In this activity you have practised skills that are assessed using Criterion B: Developing Skills and Criterion C: Thinking creatively.

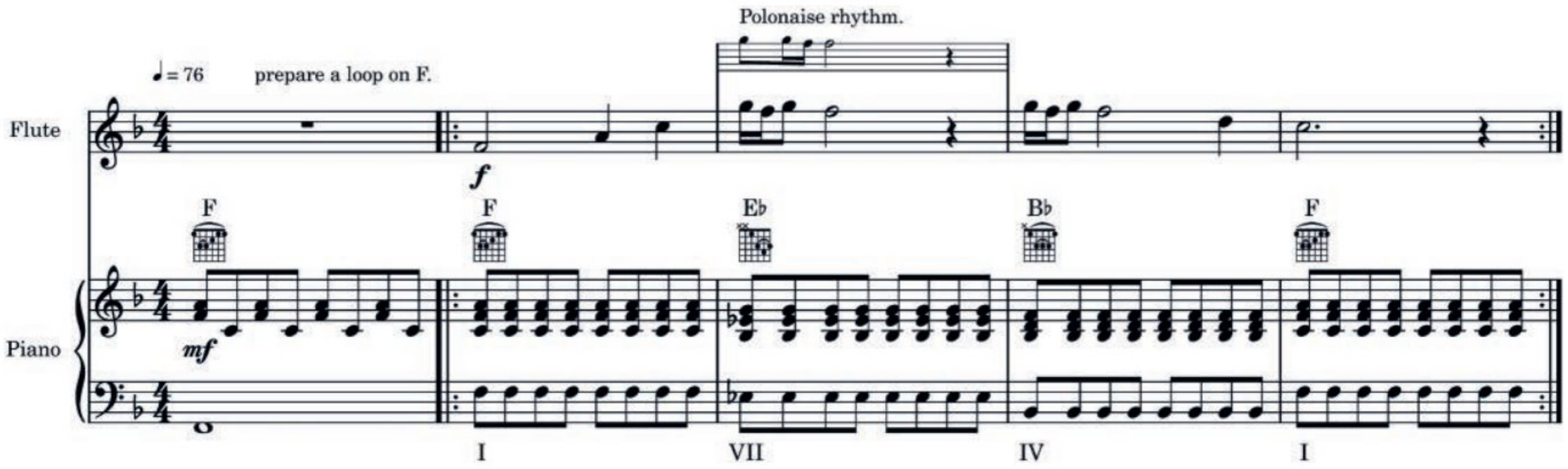
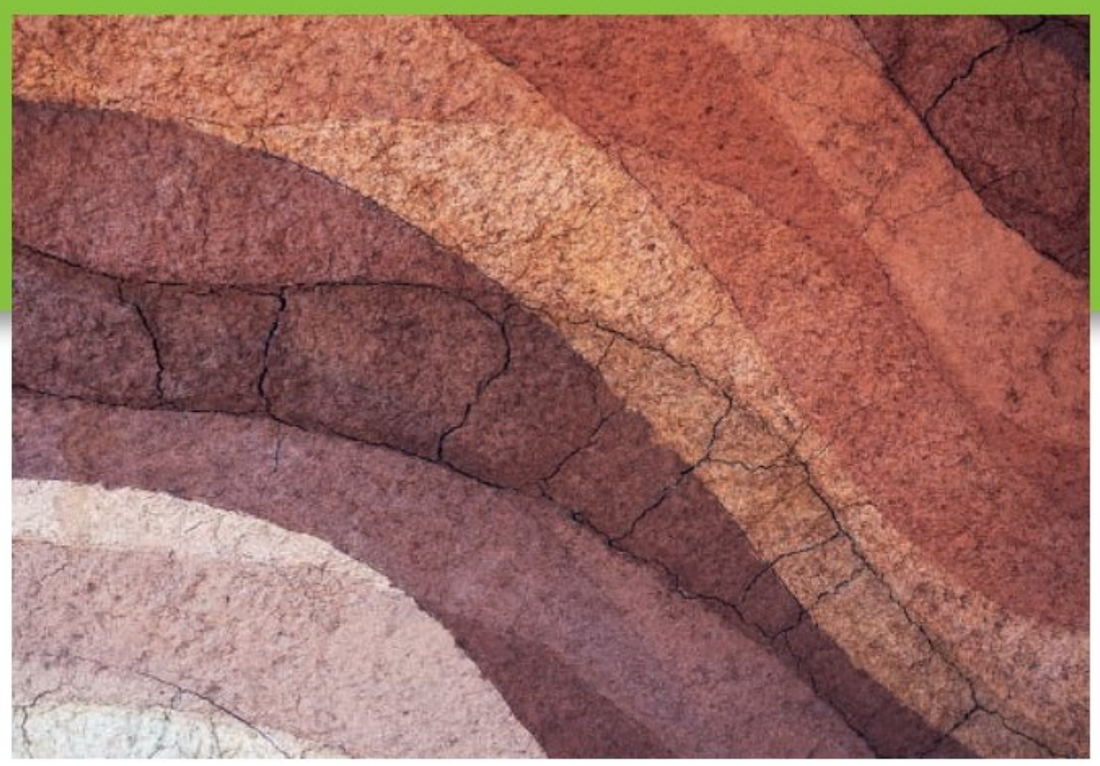


Figure 3.45 'Hey Jude' chords and ending theme with reversed baroque *polonaise* example rhythms

Is music without change just organised noise?



■ **Figure 3.46** Layers can be found anywhere!

EXTENSION
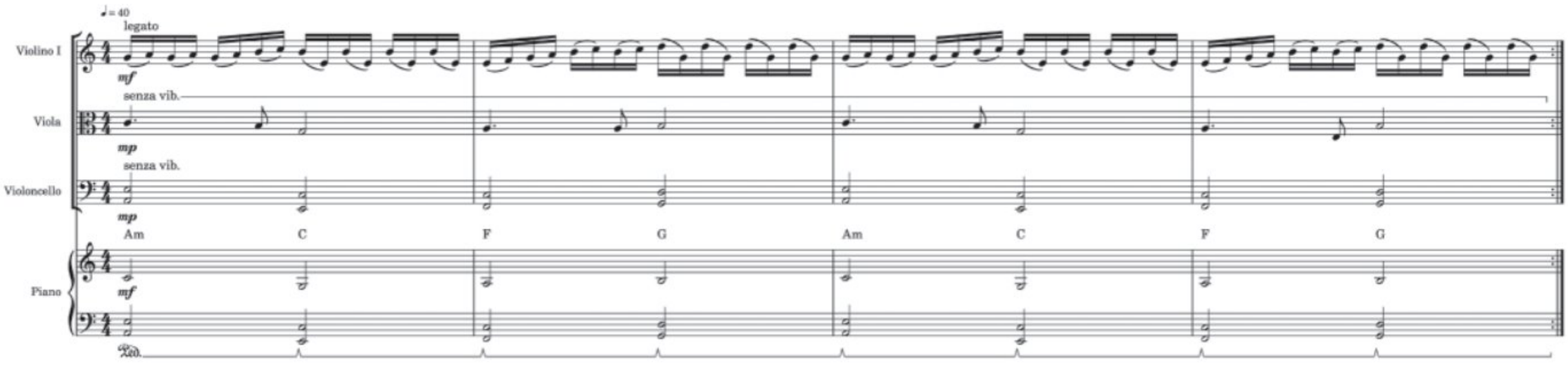
Performance extension

In the 2016 film *Arrival,* a track by composer Max Richter (b. 1966) is featured that combines much of the patterning ideas we have been investigating. His music sweeps in and out with each new texture added in the strings. Each minimal layer has a different length, and Richter is able to combine them beautifully so that they sound like they are *moving*. But he only introduces them gradually, letting our ears adjust over time. This is an example of *movement* in music and something the minimalists look to **create** in **presenting** their ideas. As you listen to 'On The Nature of Daylight' on the playlist, try to **identify** the patterns and how many times they repeat. What prevents the piece from feeling monotonous or boring? You can listen to the composer Max Richter talk about the internal structures of his work here: https://youtu.be/_kEJULlX_-c

As you listen to the work, there are certain patterns that repeat and overlap each other. Could you add your own ideas on top? The structure of this work allows further development and you can continue to build music on top of Richter's.



■ **Figure 3.47** Richter's album *The Blue Notebooks*



■ **Figure 3.48** Transcription of theme from Richter's 'On The Nature Of Daylight' for performance in A minor

ACTIVITY: Bach's *Cello Suite No. 1* and loop pedals

ATL

- Creative thinking skills: Creating original works and ideas; using existing works and ideas in new ways

Bach's six unaccompanied cello suites *BWV 1007–1012* are beautiful works for a solo instrument. Composed between 1717 and 1723, they are technically demanding and expressive, and each work has an 'inside structure' based on the Baroque dance suites. We are going to investigate and manipulate the first of Bach's cello suites, *No. 1 in G major*, and look at how composer Peter Gregson has transformed it using loops.

1 **First, listen to Yo-Yo Ma perform this cello suite on the playlist. Next, watch a dance improvisation of the work here: https://youtu.be/vWCggbEz4yg. How are the changes in the playing communicated through dance?**

In Figure 3.49, you will notice that the opening is actually an arpeggio but stretched 10 notes above the bottom note of G.

This distinctive pattern stretches upwards to form a triad at the beginning of each measure: G major in measure 1, C major in measure 2.

Discuss: Using the playlist, listen to Peter Gregson's looped version of the *Cello Suite No. 1*. Discuss as a class how *patterns* and *space* have been specifically used in his track.

Gregson's version is a beautiful and innovative reworking of this suite, using the looping arpeggios to change chords over the top. Chords such as those in Figure 3.50 that will work everytime.

Now it's your turn!

2 **a On your instrument, perform the opening arpeggio seen in Figure 3.49.**

b Record the loop into a software program and have it play back in 4/4. You can use anything from GarageBand, to SoundTrap, to a loop pedal.

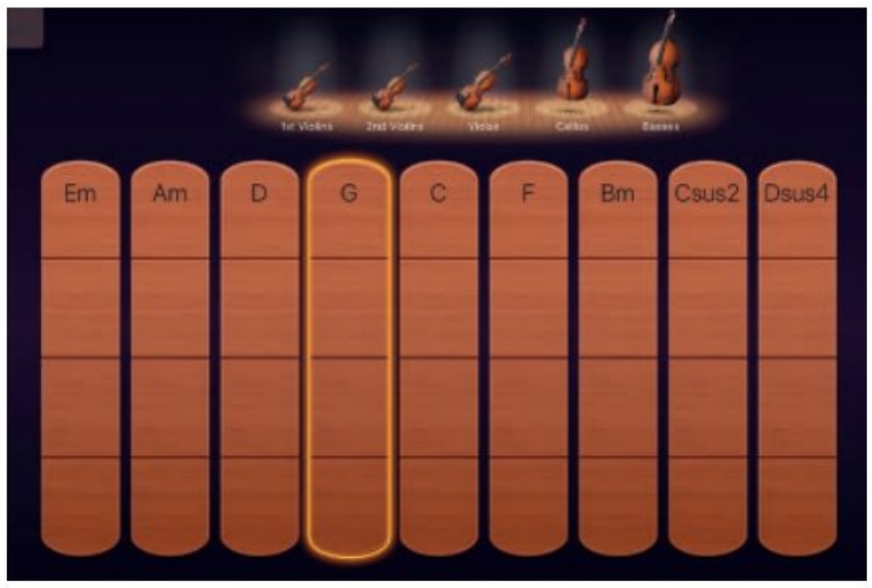


Figure 3.50 Chords to play over the arpeggio loops

c Using the chords shown in Figure 3.50, experiment playing over your looped recordings. You could use a real instrument or SMART instruments inside GarageBand.

d Decide which chords you prefer and play them to a friend for feedback as your loop-performance.

e Partner up to record each other's live performances and add them to your portfolios, with their feedback.

It is amazing what you can **create** from one loop of music!

Assessment opportunities

In this activity you have practised skills that are assessed using Criterion B: Developing skills and Criterion C: Thinking creatively.



Figure 3.49 First two opening arpeggios in the violoncello for Bach's 'Prelude in G major'

ACTIVITY: Two-chord wonders

ATL

- Creative thinking skills: Making guesses, asking 'what if' questions and generating testable hypotheses

In the Bach 'Cello Suite no.1 in G Major BWV 1007', an arpeggio pattern is **outlined** in the first and second measures. What makes it clever is that the arpeggio's shape is maintained despite our ears hearing a change in any other layer.
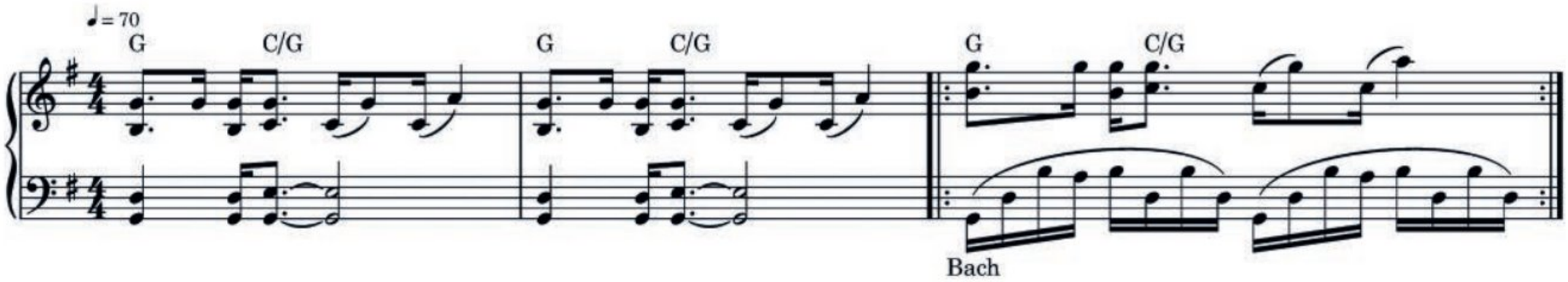


Figure 3.51 Cat Stevens' opening to 'Father and Son', with Bach added

Two chords moving in **parallel** is a common technique for creating a solid structure, introducing moments of interest. Listen to the song 'Father and Son' by Cat Stevens (released in 1970); listen in particular to the opening guitar chords. Can you hear the shift from G to C in the very beginning? There are also four notes directly after the move from G to C. **Using** our listening skills, we are going to **identify** these four notes with some targeted questions:

1. **Does the next note climb upwards or downwards?**
2. **Is the leap large or small?**
3. **Does the second note leap upwards or downwards?**
4. **Is the leap larger than the first one?**

If you **use** an instrument, or sing the melody from the recording, you will hear that the intervals are based on C-G and then C-A (a perfect 5th and then a major 6th).

Cat Stevens loops two well-used chords but provides subtle variation on top using major intervals. Clever!

Investigate other works that use two chords, such as 'Eleanor Rigby' or 'Paperback Writer' by The Beatles (C-E minor), 'Something In The Way' by Nirvana (D-F#m), 'Lively Up Yourself' by Bob Marley (D-G) or 'Family Affair' by Mary J. Blige (Am-Em). Learning to play and then hearing the changes between chords is a very useful skill.

Assessment opportunities

In this activity you have practised skills that are assessed using Criterion B: Developing skills and Criterion C: Thinking creatively.

Take action

- Find out how changes in musical thought and practice result in the generation of new approaches for music-making.
- Explore moments of change that become catalysts for popular and contemporary styles.
- Transform original ideas and choose creative presentation tools to identify and perform music in different contexts.
- Being able to express our emotions is a powerful element of live performance. Organise a concert or series of performances aimed at raising awareness for a community need or cause.

Do musicians need to know theory and / or harmony to be successful?

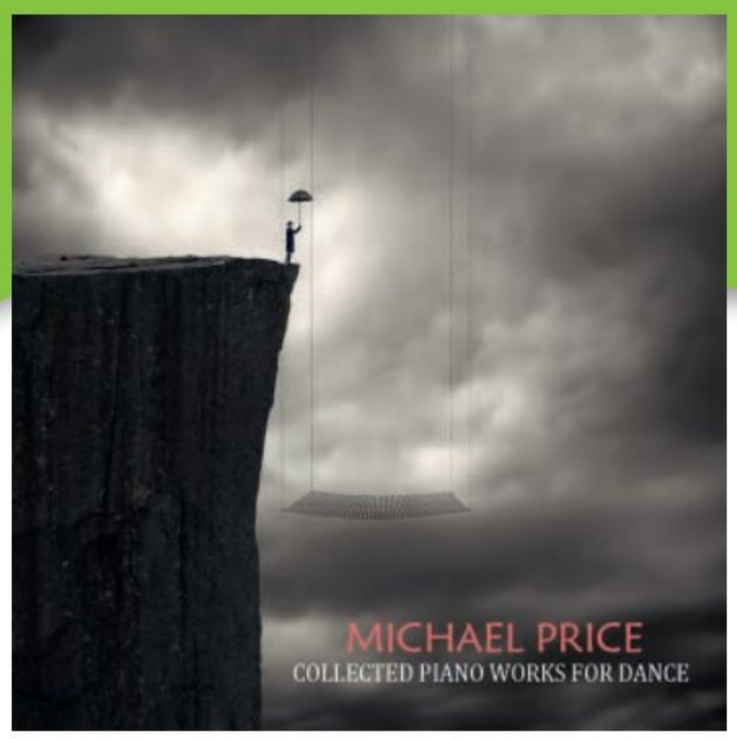


Figure 3.52 Michael Price's *Collected Piano Works for Dance*

Reflection

In this chapter, we have *compared* and *contrasted* elements of change in musical history, transformation within the music itself and even **identified** ways in which other cultures have had an impact on innovation. By *exploring* many different genres and *defining* what methods artists have **used** to **develop** their works, we have learned certain techniques to *explain* how a performer gets from a single rhythm or melody to a combination of well-structured layers. Finally, we have developed skills in identifying and justifying our arguments when discussing 'what is music?' or 'what has changed?' in different contexts.

By continuing to question where ideas come from, why musicians or artists use certain techniques and whether they can be transferred to technology new forms of expression will emerge.

SOME SUMMATIVE OPTIONS TO TRY

Use these ideas to apply and extend your learning from this chapter. These problems can be assessed using any of the strands suggested above the summative activities. The presentation and portfolio requirements are given after the description.

THIS TASK CAN BE USED TO EVALUATE YOUR LEARNING IN CRITERION A AND CRITERION C (ALL STRANDS).

SUMMATIVE 1

How you can present music that shows *space* and *movement* through repeated melodic and rhythmic patterns? Michael Price, composer of the BBC's *Sherlock*, has taken the approach of using space and movement in his own independent work called 'Dawn Light' on the album *Collected Piano Works for Dance*. Listen to the work on YouTube here: **https://youtu.be/BnDRioOwW-g** and think of the concepts of *space* and *movement* as you have in this chapter. **Use** these points to plan your project:

1. **I am thinking of *space* and *movement* from the point of view of…**
2. **I think… (describe your thoughts in detail, writing them down or recording them with a device).**
3. **A question I have from this perspective is… (What questions arise from listening to the piece, or from the idea, space and movement? How can technology be used to present my ideas?)**

Presentation and portfolio

Using repeated patterns, notate a series of sketches and experiments into a program like MuseScore or Symphony Pro on a tablet. You can start with four measures as a question, then four measures as an answer: or build on any model studied in this chapter. From there, you can repeat a pattern of four descending notes like De Falla, or an arpeggio from Bach to a loop structure. Be innovative in how you present your ideas and record anything you can perform live.

Portfolio presentation

Documenting and sharing

Keeping in line with all your activities, ideas and explorations, use the concepts discussed in this chapter to create your own diagrams and sketches of musical change. Focus on the rhythmic, melodic and textural changes of works you prefer to listen to, and then compare them to others you perform or study for composition.

THIS TASK CAN BE USED TO EVALUATE YOUR LEARNING IN CRITERION B AND CRITERION D (ALL STRANDS).

SUMMATIVE 2

We may not have a Paris World Fair, but we do have an incredible website at **www.soundslice.com/users/percuss.io** showing how it is possible to experiment with musical patterns from around the world. There are many innovative approaches to performing music, like clapping Korvai Indian rhythms, or combining your instrument with new and exciting patterns.

Choose a video from **https://www.soundslice.com/users/percuss.io/** on SoundSlice that inspires you to **create** something **a** rhythmic or **b** melodic. Loop, sing and rehearse the pattern until you can confidently perform it. With your portfolio, document your progress and then create **a** a video presentation of the pattern, **b** showing how it works and **c** how to perform it.

Presentation and portfolio

You can **use** your phone or any device to record yourself as well as your portfolios to demonstrate how you have:

1. **broken down the pattern into smaller sections for demonstration purposes**
2. **rehearsed the pattern showing progress over time**
3. **presented the pattern as a performance, including peer evaluation.**

As an extension option you can take the pattern you rehearsed and add your own phrases in a similar way to the works studied in this chapter. The website **https://femurdesign.com/omni** allows you to work with scales from around the globe to create audio loops.

Use this table to reflect on your own learning in this chapter.

Questions we asked	Answers we found	Any further questions now?
Factual: What is minimalism? What is a canon or prolation? What is a chord or chord extension?		
Conceptual: What forms of change exist in music? How do artists approach change? Which features define transformation in music? How can an artistic intention be viewed as innovative? What role does technology play in the interaction of artists and audiences?		
Debatable: Is music without change just organised noise? Do musicians need to know theory and / or harmony to be successful? To what extent does the expression of other cultures influence change?		

Approaches to learning you used in this chapter:	Description – what new skills did you learn?	How well did you master the skills?			
		Novice	Learner	Practitioner	Expert
Communication skills					
Collaboration skills					
Reflection skills					
Media literacy skills					
Creative thinking skills					
Learner profile attribute	Reflect on the importance of thinking for your learning in this chapter.				
Thinkers					

4 Is rock plagiarised?

Identifying what is **fair**, and what is original, are crucial **roles** for the **audience** and artist.



■ **Figure 4.1**

CONSIDER THESE QUESTIONS:

Factual: What is plagiarism? What is a bass line? What are riffs and ostinatos? What is a scale or a mode?

Conceptual: How do we analyse music from different genres? Which musical features define a style? What role do chords play in the direction of a song? How aware is the audience of shared connections in musical styles? What is rock or pop music?

Debatable: To what extent is imitation a good thing? Can an artist ever claim inspiration as original? Does the audience have the final say on what is good?

Now **share and compare** your thoughts and ideas with your partner, or with the whole class.

IN THIS CHAPTER, WE WILL…

- **Find out** what features make up the musical genre called *rock*, and where they came from.
- **Explore** the possibilities of breaking down music into its basic components, to build it into new and original forms that have us as the creator.
- **Take action** in solving actual court cases of copyright law using our in-depth knowledge of the 'fingerprints' of rock music. This will in turn arm us with the language needed to discuss, interpret and perform music that relates to an audience.

These Approaches to Learning (ATL) skills will be useful…

- Communication skills
- Information literacy skills
- Media literacy skills
- Critical thinking skills
- Transfer skills

Assessment opportunities in this chapter:

- Criterion A: Knowing and understanding
- Criterion B: Developing skills
- Criterion C: Thinking creatively
- Criterion D: Responding

We will reflect on this learner profile attribute…

- Principled: We act with integrity and honesty, with a strong sense of fairness and justice, and with respect for the dignity and rights of people everywhere. We take responsibility for our actions and their consequences.

KEY WORDS

ostinato
scales
inversions
chord progression
bass line
riff
lyrics
stanza
figured bass
tutti
solo
root position
modulation
diatonic
modal
chord extension
plagiarism

Links to: English; Literature Studies; Business Management; Economics

English studies rely on arguments generated from textual, comparisons and opinion. Using the same techniques to justify musical analyses with evidence, students can look at the way music and literature appropriate from past authors to create original ideas. Additionally, the music economy is a large machine from producers and small studios, to record labels and J / KPOP. Analysing the contribution of artists' work to the industry will have an impact on what is viewed as 'original'.

Prior knowledge

This chapter works on the premise of including all levels of learners. You will find it useful to know:

- how to play and / or identify scales, chords, bass lines and riffs or ostinatos
- how to play, notate and / or identify groups of rhythms, including drum patterns
- how to work collaboratively to express musical ideas with body percussion, voice, instruments and technology
- what working within an ensemble means for balance and intonation, but also communication
- ways of describing music using pitch, duration, texture, structure, tone-colour, dynamics and expressive techniques to document the fingerprints of a style
- how to approach rehearsing, experimenting and presenting musical ideas from research and analytical listening.

Examples, links and referenced materials will guide you further.

EXTENSION

Performance extension: Vitamin String Quartet

The Vitamin String Quartet website has an incredible collection of rock pieces arranged for **string quartet**: www.vitaminstringquartet.com/collections/sheet-music. The pieces by Radiohead, Led Zeppelin and MUSE are excellent for study and live performance. They work very well in giving you an understanding of rock riffs (repeated **ostinato** patterns) that are used to unify a song.

COMPASS POINTS FOR ROCK

The fingerprints of rock

If someone was to ask you to give examples of what makes certain types of music 'rock', or other branches from the same tree of style (pop, soul, reggae, metal, house or future bass), what would your answer be? This chapter will have you questioning like a detective, gathering clues and evidence for what is known as *rock music*. Narrowing down a style to its core elements is a difficult task, but not impossible if we:

1. **develop an approach to examine music at a big-picture level, and at the level of a fingerprint**
2. **use the same system of analysis for each work, gathering evidence along the way**
3. **research real cases of suspected plagiarism, leading to investigations resulting in lawsuits that will be proven true or false by your evidence.**

Set up your classroom into four areas (East, West, North, South). Split into four groups, and in each of these areas discuss answers to the following question:

Is rock plagiarised, or based upon plagiarism?

East is **excited**: What excites you about this idea or question? What's the upside?

West is **worrisome**: What do you find worrisome about this idea or question? What's the downside?

North is **need to know**: What else do you need to know or find out about this idea or proposition? What additional information would help you to **evaluate** it better?

South is **suggestion for moving forward**: What is your current opinion on this idea or proposition? How might you move forward in evaluating it?

Hint

Throughout this chapter, collect evidence on every song you study. Organise it into grids or tables that focus on melodic, **rhythmic**, harmonic and structural material. You will need it in the court case at the end!

Portfolio presentation

Case study 1: *Stairway to Heaven*

Led Zeppelin are arguably one of the most influential rock groups in history. They were thrown into a court case in 2014 over the claim that they plagiarised a song by American progressive-rock band Spirit. According to *The New Yorker*, the suit claims that the famous descending bassline and **arpeggios** of Led Zeppelin's 1971 song 'Stairway to Heaven', were taken from Spirit's 1968 instrumental 'Taurus'. However, upon further investigation, it was found that this exact same **progression** existed as far back as the Baroque Era, leading many to ask: Can you copyright a progression?

1. Listen to the three tracks on the playlist starting with Led Zeppelin's 'Stairway to Heaven', then Giovanni Battista Granata's (1620–1687) 'Sonata di Chittarra' and ending with 'Taurus' by Spirit.
2. In your portfolio, compare the three works following the diagram in Figure 4.2. Leave space to discuss each of the following types of material:
 - **a** **Melodic**: melody notes, shape of each phrase, recurring **intervals**
 - **b** **Rhythmic**: patterns, notes used such as **quavers** or 8th notes, **syncopation**
 - **c** **Harmonic**: **chords**, progressions, how often they change, arpeggios.

If you can get a score or guitar **tab** (special notation showing guitarists where to place their fingers on the instrument), this will *improve* your evidence collection.

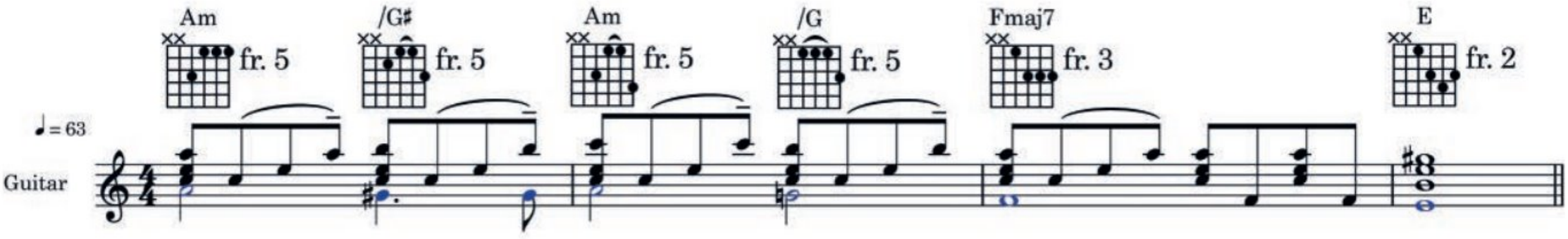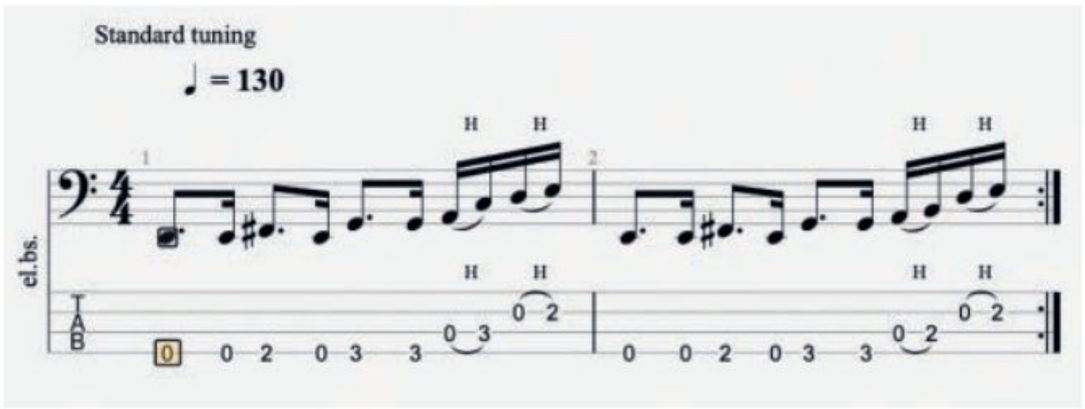


Figure 4.2 Granata's 'Sonata di Chittarra' at approx 32 seconds transcribed to A minor for comparison

What is a bass line?



■ **Figure 4.3** Bass line 'Roundabout' by Yes in Guitar Pro 7 format showing repeated patterns

THE FINGERPRINTS OF ROCK: BASS

What do pop artists Selena Gomez and Clean Bandit have in common with Antonio Vivaldi? You would be right if you said it's 'all in the bass!'

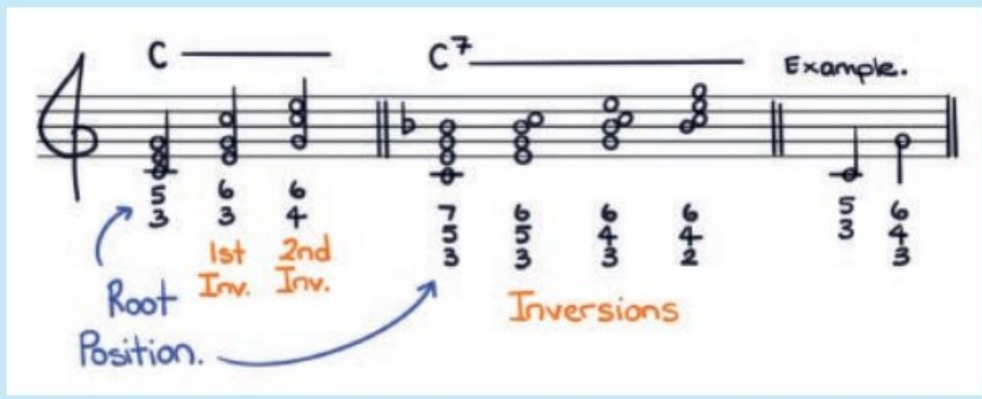
During the time of the Baroque era (17th to mid-18th Centuries), it was common to hear a certain chord progression led by the bass line known as the *circle of 5ths or 4ths*. We looked at this circle back in Chapter 1, where we discovered it uses the intervals of 5ths or 4ths to go around the entire circle of these interval shapes. This circular bass movement gave rise to a chord progression that is very recognisable.

For example, the bass line from Vivaldi's tutti section in *Concerto No. 4 in Fa minore Op. 8.* 'L'Inverno' ('Winter') moves in leaps of 4ths from F to B♭ to E♭ A♭ D♭ G and then finally C and F, completing the circle. This bass line appears in the works of J.S. Bach, Handel and, of course, rock and pop musicians. Why? As we will discover, what audiences responded to in the 17th–18th Centuries is still popular today.

MEET THE COMPOSER: ANTONIO VIVALDI
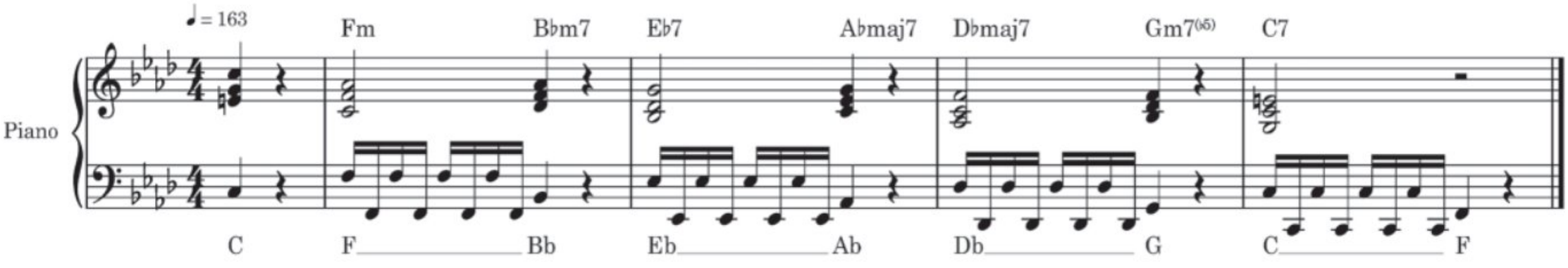
Antonio Vivaldi (1678–1741) is known for his string and choral compositions, but did you know he wrote for lute and mandolin as well? Vivaldi wrote many **concertos**, with several **movements** normally in a fast–slow–fast pattern; then inside a movement, sections would alternate between everyone playing together (known as *tutti*), and solo passages. This internal structure became known as **ritornello form** with supporting string players called the *ripieno* (stuffing) and *basso continuo* (the bass line and chords). If you listen to his *Lute Concerto in D major RV 93*, you will get an impression of how this tutti–solo arrangement worked just like a rock band. You can view a live performance on YouTube by mandolinist Avi Avital with the Venice Baroque Orchestra here: **https://youtu.be/5ROFFTddbi8**

According to accounts, Vivaldi would write the bass part first (the *basso*), with small numbers underneath called *figured bass* that the harpsichordist would turn into chords (called the *continuo*). All the other parts, from the strings to the soloist, would be built upon this bass line.



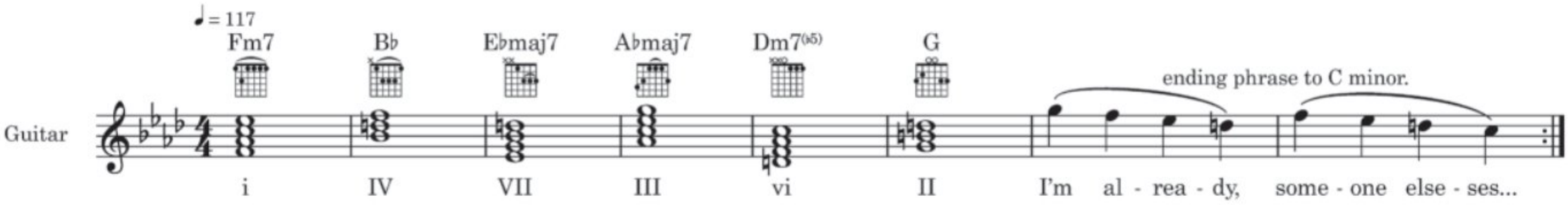
■ **Figure 4.4** Here a bass note with a number describes whether a chord is to be played in root position, or an inversion.

In your portfolio, draw a structural diagram of the first movement of the *Lute Concerto in D Major RV 93* showing tutti and solo changes. Try to identify and describe the bass patterns you hear in each of these sections.



■ **Figure 4.5** Vivaldi's bass line from *The Four Seasons'* 'Winter'

Listen to Selena Gomez's 2011 pop song 'Love you like a Love Song'. If you compare the bass note pattern of the chorus, it is the same pattern as Vivaldi's! Fast forward to 2018 with the pop-electronic group Clean Bandit's song 'Baby' (Figure 4.6). Their chorus uses the same progression, with the bass stepping up by 4ths and down by 5ths each time:



■ **Figure 4.6** Clean Bandit's 'Baby' following Vivaldi's bass and progression.
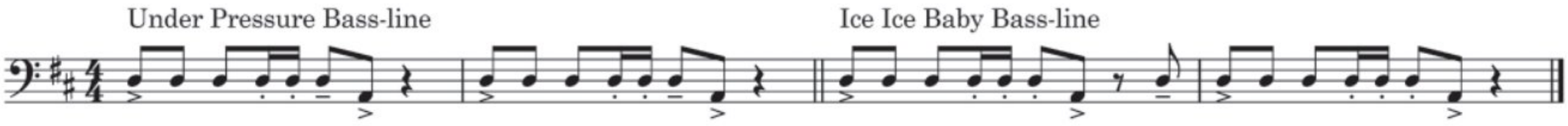
Portfolio presentation

Case study 2: *Under Pressure*

The artist known as Vanilla Ice wrote a now infamous song in 1989 entitled 'Ice Ice Baby'. Despite Queen and David Bowie's 1981 hit 'Under Pressure' being voted as the second-best collaboration of all time by *Rolling Stone* magazine, Vanilla Ice not only used the exact same bass line in his own song, but claimed they were different *because of a single added note*. The case involved many strange interviews with Vanilla Ice; however, it was finally settled out of court.

Listen to the tracks on the playlist and discuss as a class whether there really is a case of plagiarism here. The two bass lines are notated below; with your instruments or devices, take turns at playing them.

Is this example merely about choosing to act fairly when imitating someone? Or did Vanilla Ice miss a great opportunity to develop a new and more original bass line?



■ **Figure 4.7** Two bass lines compared: Can you spot the difference?

ACTIVITY: Connecting bass lines

ATL

- Communication skills: Negotiating ideas and knowledge with peers and teachers

In the following steps, we will be playing a circle bass line and progression on your instruments or devices **using** the material in Figure 4.8.

1. **Using the bass line outlined below in A minor, practise playing the notes to a steady pulse. Always repeat and cycle the progression back to the beginning.**
2. **Using the chord symbols and / or guitar diagrams, rehearse in small groups the bass line and chords. You want to be able to change and hit the correct notes in time accurately.**
3. **If you or another musician can play the extended chords of dominant and major 7ths, make sure you add them in on the correct beats (the minor 7 flat 5 chord is very dissonant by itself, but it helps bring the circle back to the beginning).**
4. **Once you have played through Figure 4.8 a few times, ask one group member to improvise a melody or to hold longer notes while you all play through the progression. What do you notice starts to happen?**

Assessment opportunities

In this activity you have practised skills that are assessed using Criterion A: Knowing and understanding and Criterion B: Developing skills.

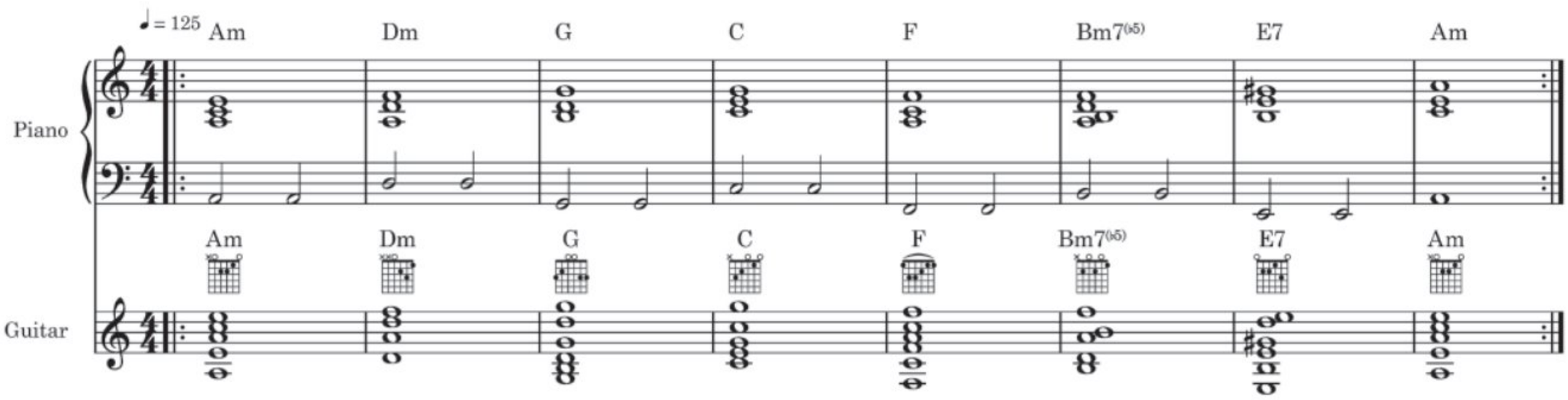


Figure 4.8 Circle of 5ths model progression to perform and create with

Listening strategically: Get an IDEA

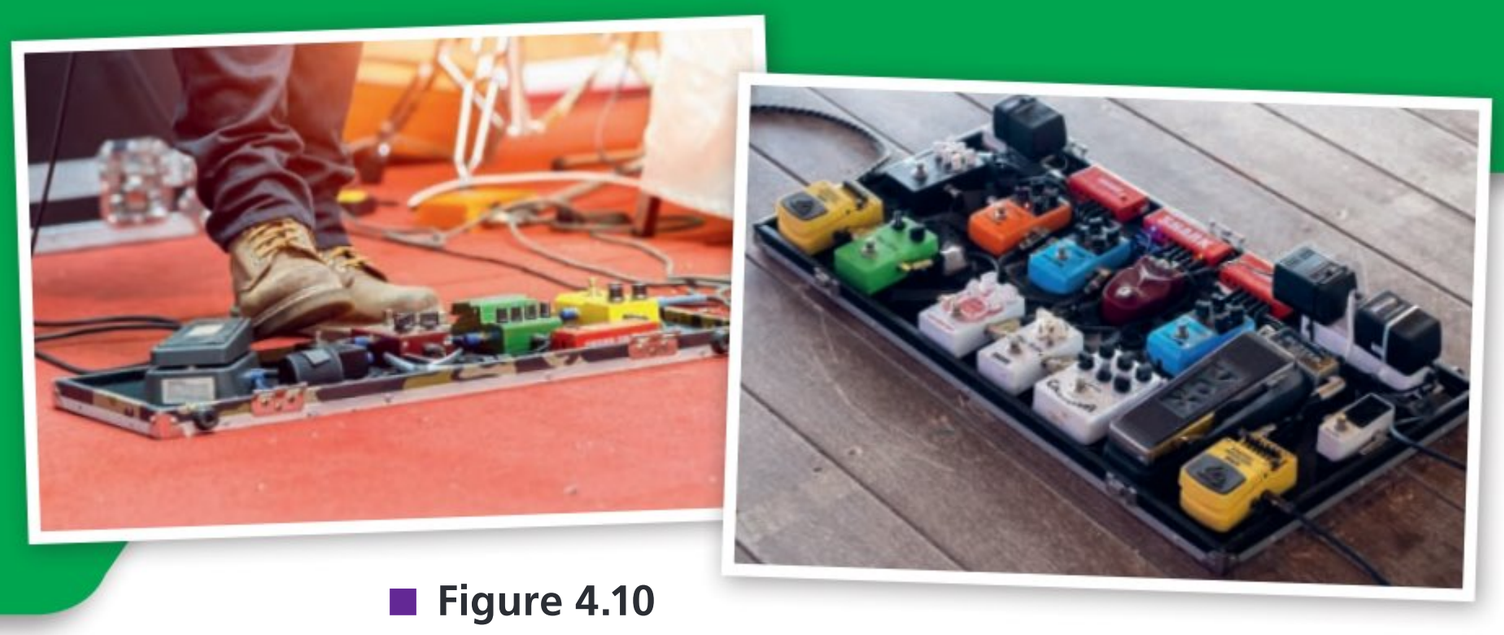
Listen to Led Zeppelin's 'Dazed and Confused' on the playlist and write a short analysis in your portfolio. You will instantly recognise a bass line that seems to step or walk downwards. Then, after the verse is performed, there is a more rock-inspired bass line that **locks in** with the drums and electric guitar.

As you listen, can you **imitate** each layer of sound on an instrument? Better yet, notate them as symbols? What sounds or patterns can you **Identify**? **Describe**? **Explain**? **Analyse**?

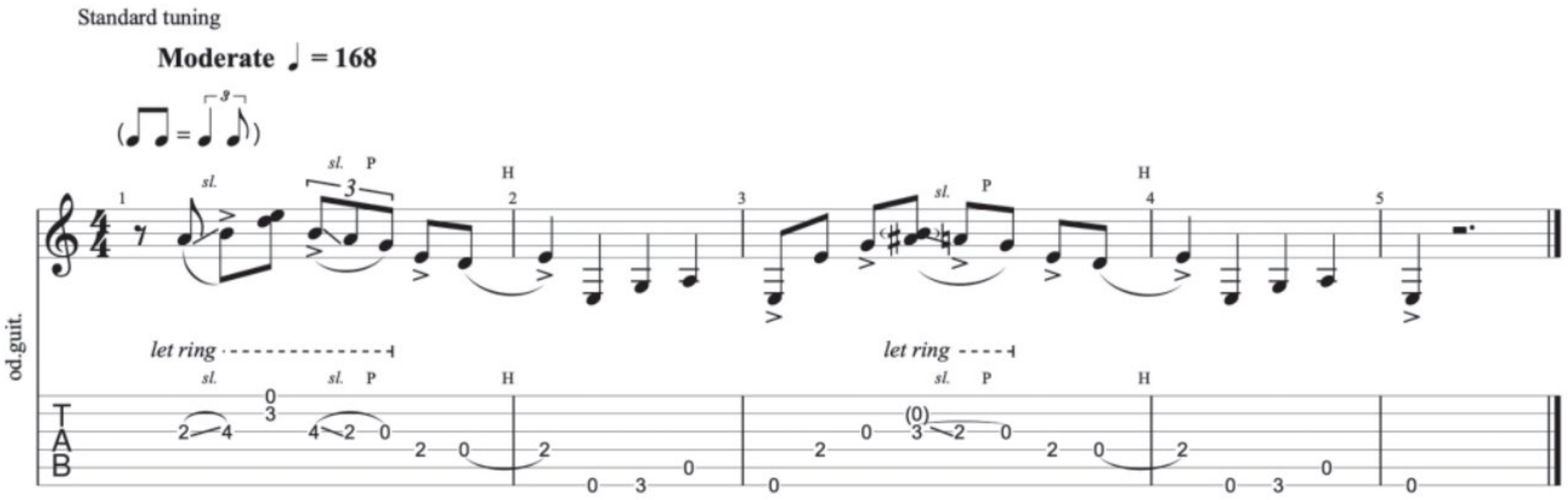


Figure 4.9

What are riffs and ostinatos?



■ **Figure 4.10**



■ **Figure 4.11** Riff from 'Boom Boom' by John Lee Hooker
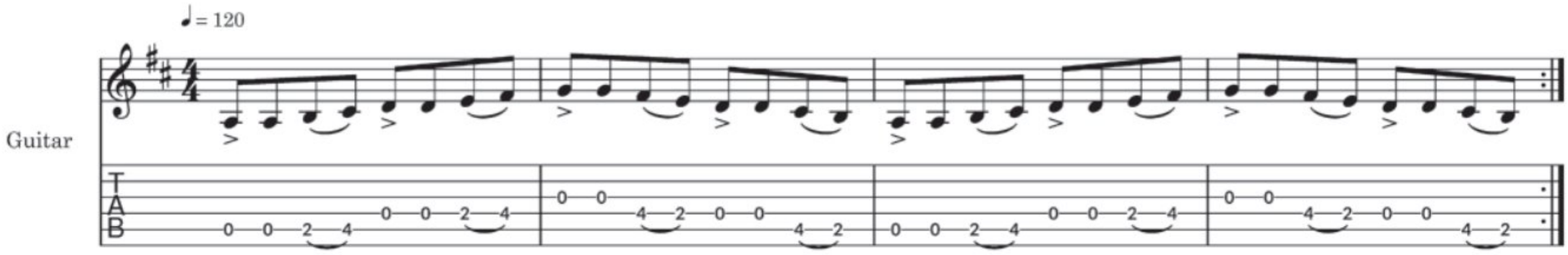
THE FINGERPRINTS OF ROCK: RIFFS

Portfolio presentation

Case study 3: Green Day

When a rock song begins, you normally hear a catchy part that everyone wants to play. This part gets stuck in your head and repeats throughout the track. We call this a *riff*. This is exactly why Green Day's song 'Warning', from their sixth studio album released in 2000, brought a serious question of plagiarism to listeners and musicians alike. Why? The Kinks' song 'Picture Book', released in 1968, has an almost identical riff structure.

Their opening guitar and bass line was an obvious inspiration for 'Warning'; the question is: Just how close are the two songs? Utilizing the notated version of 'Warning' in Figure 4.12, compare it with 'Picture Book' using the playlist and your own performance skills.



■ **Figure 4.12** Riff from 'Warning' by Green Day

ACTIVITY: Riff construction

ATL

- Media literacy skills: Comparing, contrasting and drawing connections among (multi)media resources

Constructing a riff can be fun. All that is required is a group of willing musicians who are ready to experiment. It also helps if there is a drummer or **loop** playing to keep you in time. The last ingredient is something called *active listening*. This is where you continually listen, write, and rehearse riffs of other musicians. Riffs which you can then **develop** to make your own.

1 **John Lee Hooker: 'Boom Boom'**
 - a **Listen to the track on the playlist with a partner or small group.**
 - b **Can you describe the shape of the riff to a friend?**
 - c **How does the riff provide structure to the track?**

Hint

Think 12-bar blues.

2 **Dire Straits: 'Money for Nothing'**
 - a **Listen to the track on the playlist with a partner or small group.**
 - b **Can you describe the rhythm of the riff to a friend?**
 - c **How long is the riff in measures or phrases?**

With your instruments, gather your ideas to construct a rock riff. Consider the ingredients of repetitive notes, short melodic phrases and a lot of repetition to make your own. This is called *active listening*.

Don't forget to record each experiment into GarageBand or SoundTrap or onto your device. You can build on this in the assessments at the end of this chapter.

Assessment opportunities

In this activity you have practised skills that are assessed using Criterion A: Knowing and understanding and Criterion C: Thinking creatively.

Use the following questioning methods to structure your thoughts:

1 Do the two riffs use the same **rhythmic material** (for example, the same quavers or 8th notes)?

2 Do the two riffs have the same melodic shape? (If they have the same notes that is quite obvious, but does the shape change direction? Go up and down the same way? Repeat the same steps or intervals?)

3 Do the two riffs have the same chord structures? (For example, both might start in a different key but have the same progression.) 'Picture Book' uses chords that step up a perfect 4th each measure:

E – up four steps to –	A – up four steps to –	D – up four steps to –	G, then half-steps to E.

Whereas 'Warning' also starts this way, it steps up a perfect 5th at the end:

A – up four steps to –	D – up four steps to –	G – steps down to –	A, to start the riff anew.

Now using your answers, what is your verdict? Can you identify elements that may have been developed differently by Green Day?

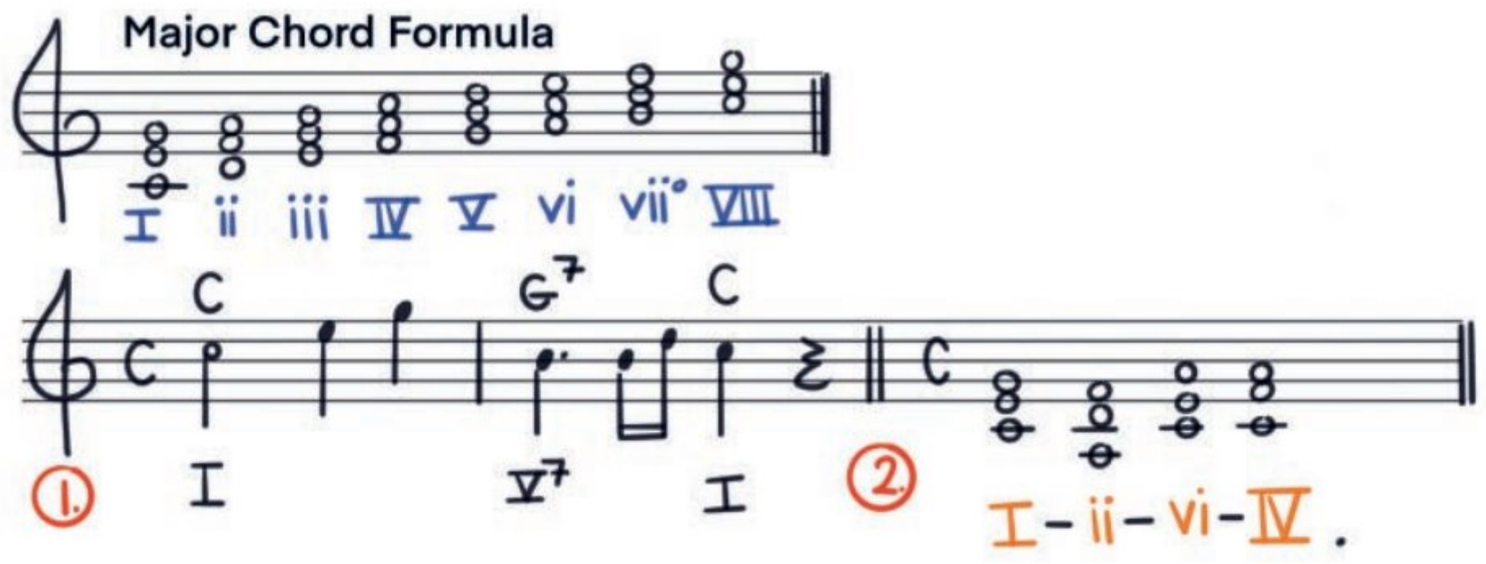
Hint

Having the same instruments or tempo is not enough to say you have 'evidence' of plagiarism. Look for specifically repeated patterns, intervals, chords or phrases, then notate them to get your final answers. This is what would be called *evidence*!

What role do chords play in the direction of a song?



■ **Figure 4.13**



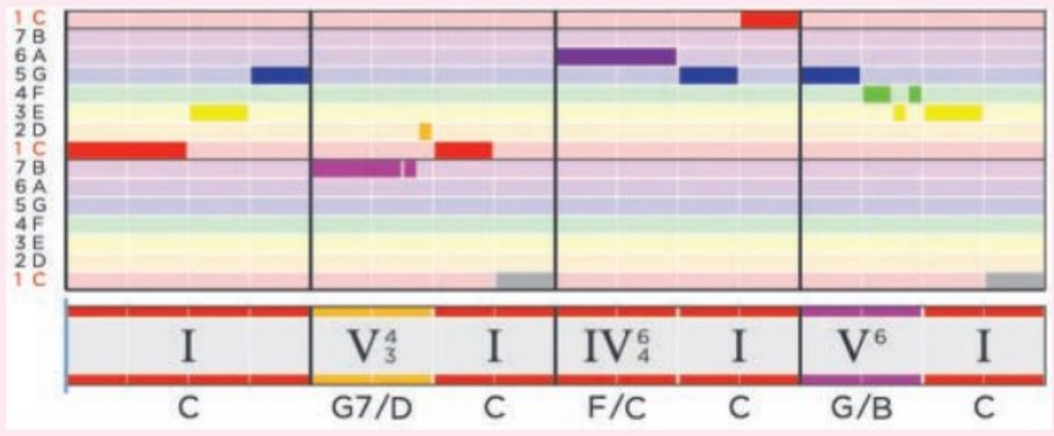
■ **Figure 4.16** Major scale chord formula and Bach (example 1) with chords from Taylor Swift's 'Delicate' (example 2)

THE FINGERPRINTS OF ROCK: CHORDS AND PROGRESSIONS (PART 1)

Music exploration: Mozart to Taylor Swift

Musicians rely on certain elements to communicate their intent to an audience. If an artist can help the audience identify with their message, then they can capture an audience's attention from the first ten seconds of a song. One part of this exchange between musician and audience is *chord choice*.

Chords can be used to express all manner of emotions, from fear to love and sadness to joy. Other building blocks can enhance those emotions, such as rhythm, dynamics or texture. The chords themselves can structure an entire song and move the listener into new directions. To be able to identify different chords and progressions, you need to be aware of the vocabulary, so let us explore Mozart's 'Piano Sonata No.16 in C Major K545' with the help of **https://www.hooktheory.com/theorytab/view/wolfgang-amadeus-mozart/piano-sonata-no-16-in-c-major---i**



■ **Figure 4.14** 'Piano Sonata No. 16' from Hooktheory

Written in the key of C major, this piece has a bass pattern outlining chords in the key of C. However, what does this mean? Every major **scale** has 8 notes, and upon these 8 notes we can build different-sounding **triads**, or chords.

There is a formula that musicians know for composing that works in almost every situation. In a major scale the formula of chords using Roman numerals is: **I ii iii IV V vi vii° VIII**
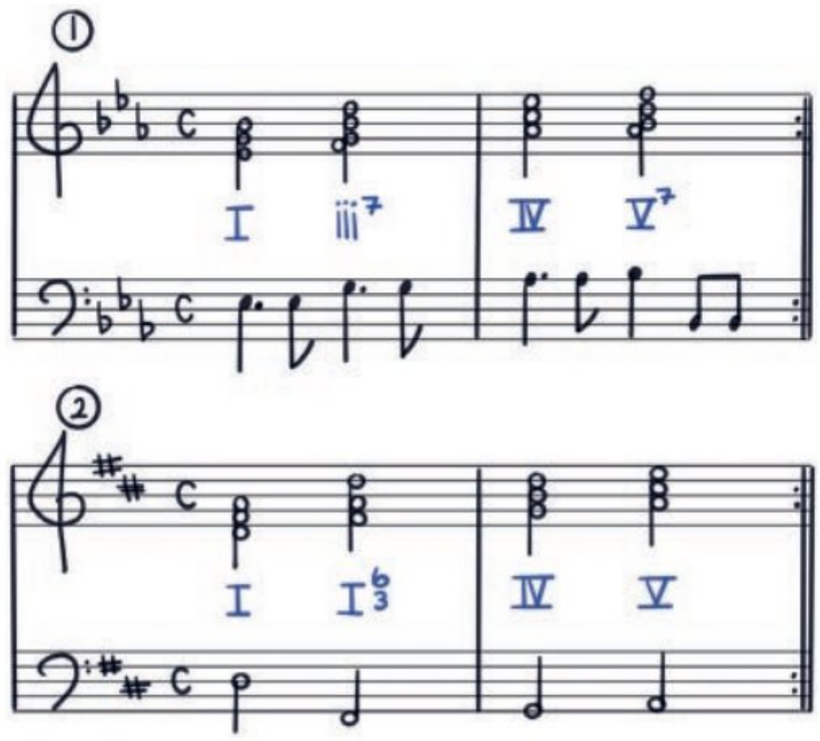
Portfolio presentation

Case study 4: Ed Sheeran

Singer-songwriter Ed Sheeran had a claim brought against him in 2016 that alleged his hit song 'Thinking Out Loud' took the chord progression of Marvin Gaye and Ed Townsend's 'Let's Get It On' from 1973. The harmonic material used by Sheeran is very close to that of Gaye and Townsend's song but, as we have been discussing, evidence needs to be provided of this similarity. Plus, is it fair to say someone has copied a chord progression? Using the major chord formula in Figure 4.16, we will place the progressions side by side and start collecting our evidence.

'Let's Get It On' is in the key of E♭ major following a progression of I-iiim7-IV-V7. 'Thinking Out Loud' is in the key of D major following a progression of I-I6-IV-V. Listen to the two songs on the playlist and visit Sheeran's track here: **www.hooktheory.com/theorytab/view/ed-sheeran/thinking-out-loud**

Having listened to the two songs, and viewing the chords side by side, do you think the evidence supports a plagiarism claim?



■ **Figure 4.17** Comparison of chord progressions from Gaye (example 1) and Sheeran (example 2), with minor 7ths and inversion chords

What if other songs used the same chords? 'Crocodile Rock' by Elton John (1973) and the chorus from 'Easy' by The Commodores (1977) are both based on the I-iii-IV-V progression. Is it possible that the **development** of musical content over time, all using the same major scale system, may sometimes sound similar?

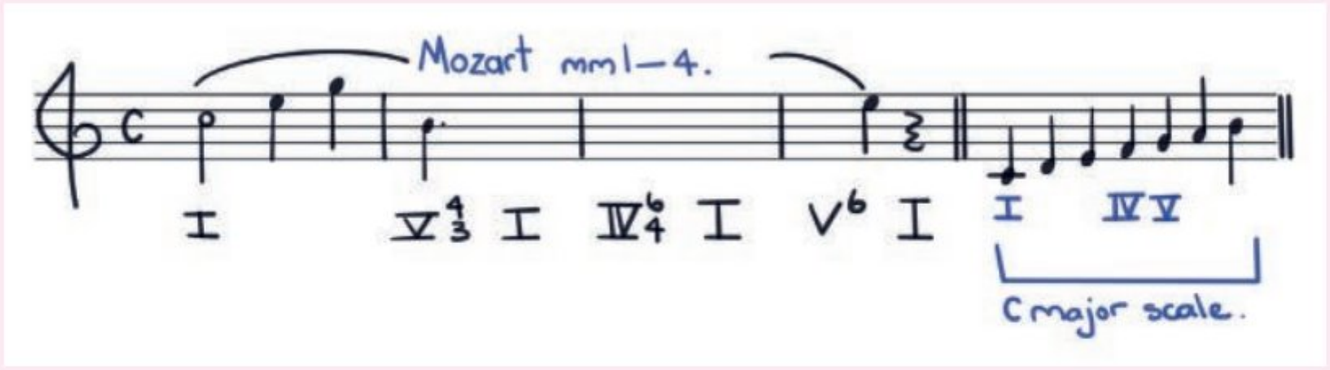
Using your portfolio, copy the progressions and play them for yourself. In your classroom, hold a group discussion how you would have proved and / or disproved the claim?

(with 'I' being the name of the key). Within this formula, every upper-case Roman numeral is a major triad, and every lower-case Roman numeral is a minor triad. This means we can now write a hit song like Taylor Swift's 'Delicate' because it uses chords **I-ii-vi-IV** directly from the same scale as Mozart's 'Piano Sonata No.16'!

I (C major)	ii (D minor)	vi (A minor)	IV (F major)

Look at the opening of the 'Piano Sonata No. 16'; the basic chords are one triad per measure, with some having two triads per measure – all relying on the *major scale formula*.

Lastly, you will start to see that some chords have a 7, or a 6, or other symbols such as a triangle Δ next to them. These are extended triads, or the order of the notes has been re-arranged to form what we call **inversions**.



■ **Figure 4.15** Mozart's use of the major scale formula (with figured bass)

ACTIVITY: Chords in rock and pop (part 1)

ATL

- Information literacy skills: Making connections between various sources of information

Chords in rock-pop music don't always stick to the rules. The chord formula of I ii iii IV V vi vii° VIII is a great start, but what if you wanted to extend your ideas a bit further? This is where we will discover that artists and song-writers also use similar techniques to Mozart by adding 7ths to their chords, or by changing them slightly. Use Hooktheory to engage in some active listening.

1 **Redbone: 'Come and Get Your Love':**
www.hooktheory.com/theorytab/view/redbone/come-and-get-your-love

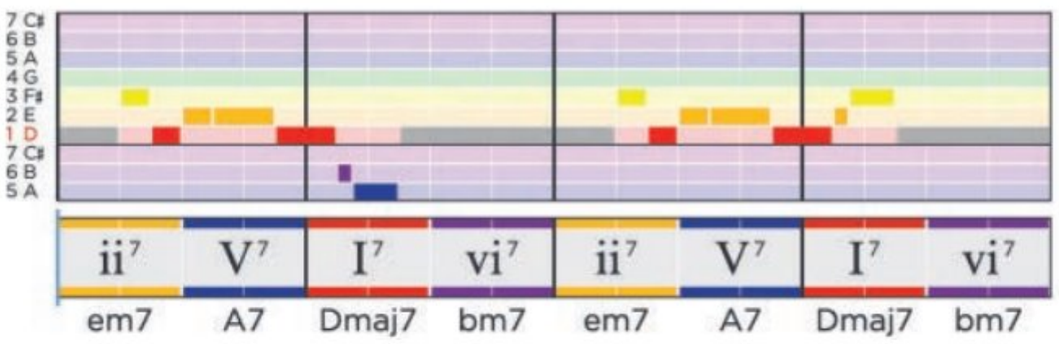


Figure 4.18 'Redbone' from Hooktheory

 a **Notice that every chord is a 7th chord (has a 7 after its numeral). This means they are a 4-note chord, instead of the usual 3.**
 b **Click the piano icon to see how they are played (see Figure 4.19). You could try these yourself on a device or with a keyboard in your classroom.**

2 **David Bowie: 'Space Oddity':**
www.hooktheory.com/theorytab/view/david-bowie/space-oddity
 a **Here, Bowie alternates the I (C) and iii (E minor) chords between each other.**
 b **Notice what the D major chord sounds like. It should be D minor according to the chord formula, but this produces an interesting change to the progression.**

3 **Beyonce: 'Halo':**
www.hooktheory.com/theorytab/view/beyonce/halo
 a **This is a common progression of I-ii-vi-IV.**
 b **Notice how the rhythm of the drum kit adds movement to the song, augmenting the 8th notes (quavers) in the chord progression.**

Write your own 8-measure chord progression. You can copy one of the patterns above, alternate two like Bowie or make them all 7ths as in 'Redbone'. Write them in your portfolio **using** Roman numerals, and ask a friend to play it for you. Finally, record it and keep it for the next activity.

Assessment opportunities

In this activity you have practised skills that are assessed using Criterion A: Knowing and understanding and Criterion B: Developing skills.

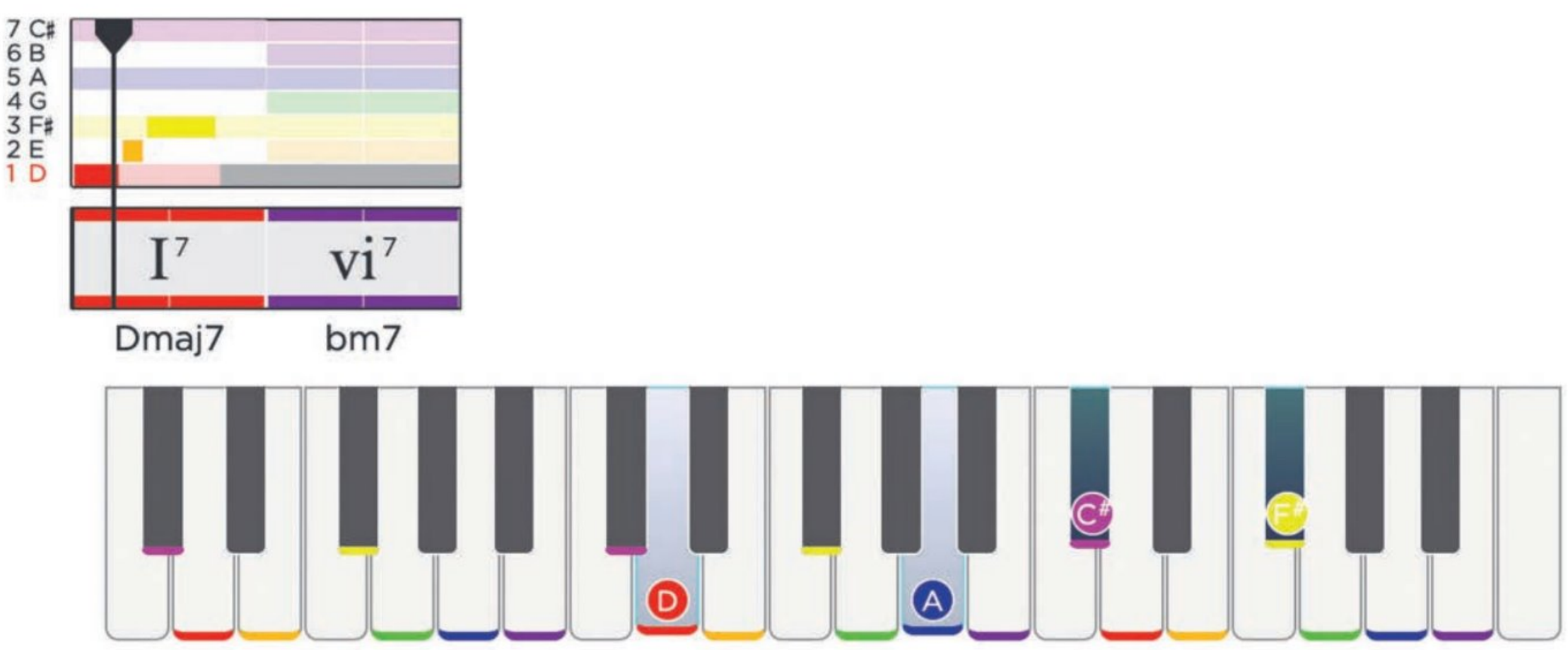


Figure 4.19 Using the keyboard function with Hooktheory

How aware is the audience of shared connections in musical styles?



■ **Figure 4.20**

THE FINGERPRINTS OF ROCK: CHORDS AND PROGRESSIONS (PART 2)

Music exploration: Extending what we know about chords

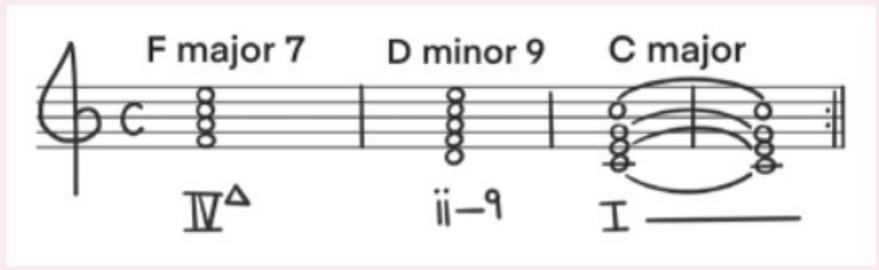
There are a few extra parts you need to add to your musical vocabulary regarding chords. These are **a** *inversions* and **b** how **extensions** work.

Inversions: You never have to perform a triad the way it is written down. There are always creative options when you play a chord such as C major, as long as you use all the notes of the triad. You can re-arrange or *invert* the chord by placing E or G on the bottom. We call these *first* and *second inversions* and they are often labelled with the figured-bass symbols that we studied earlier. If C is on the bottom of the chord, then we call this a *root position* triad.

If we make a C7 chord of C E G B♭, then we have another note we can place on the bottom instead of C, turning it into a 3rd inversion. You can see how it is represented below with figured bass and labels.

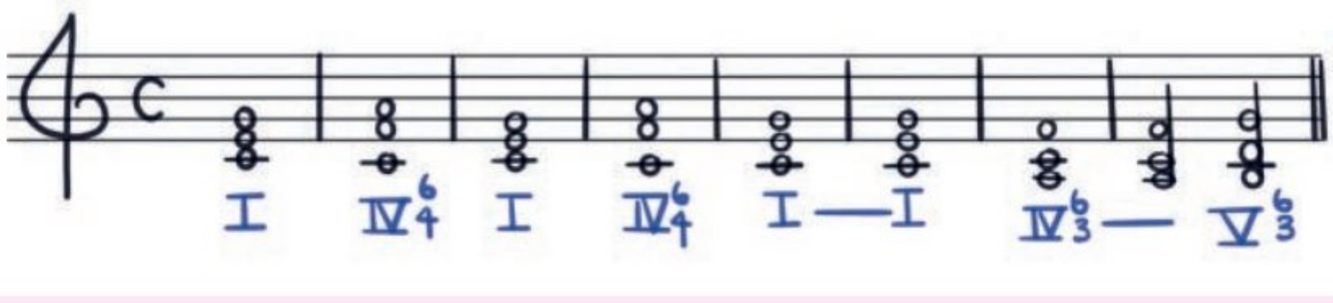
Extended chords: Extended chords are just that: chords with extra notes added on top. These extra notes come from the scale that is named by the chord, for example C major 7 (add 9) uses the 7th note B from C major, and D, which is the 9th note when you continue counting up from C (c d e f g a b c – d).

Some chords are more common than others, depending on the style of music you listen to. Here are some extended chords similar to the introduction of Guns N' Roses' 'November Rain'.



■ **Figure 4.22** Extended chords showing added 7ths, 9ths and their symbols. Notice they all come from the C major chord formula IV ii I.

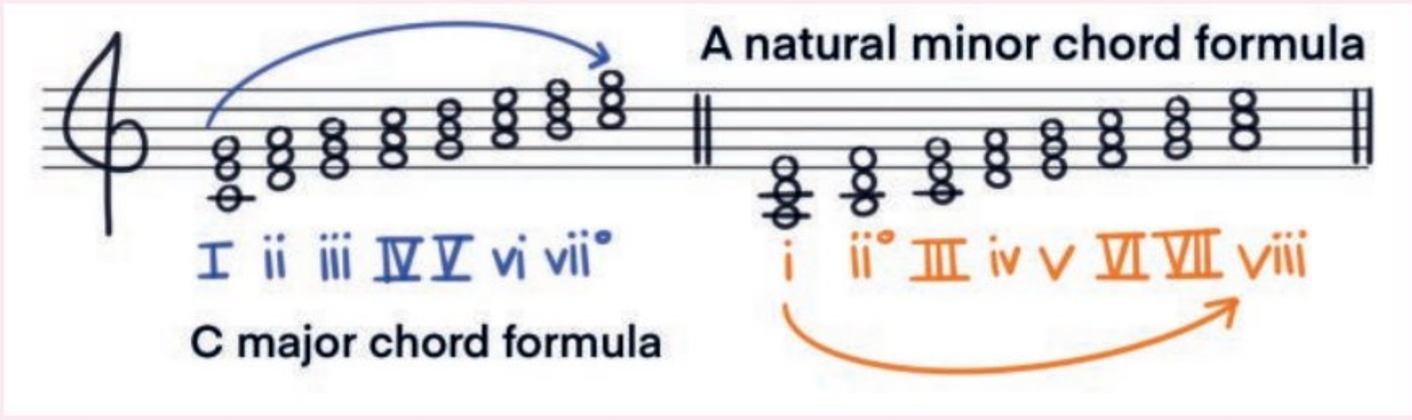
This brings us to another important formula: the natural minor scale formula of **i ii° III iv v (or V) VI VII viii** (see Figure 4.27). Many songs are written in minor keys, and this tonality has a slightly different formula from the major one.



■ **Figure 4.21** Inversions in context of the C major chord formula similar to the verse of 'Tiny Dancer' by Elton John. Notice how labels of figured-bass numbers identify the different inversions?

To hear this in action, go to the track 'Papaoutai' (2013), written by Belgian artist Stromae, on the playlist and Hooktheory:
www.hooktheory.com/theorytab/view/stromae/papaoutai
It is composed in B♭ minor and its chorus follows the natural minor scale formula with this repeated structure of four chords:

VI (G♭ major)	**iv** (E♭ minor)	**VII** (A♭ major)	**i** (B♭ minor)



■ **Figure 4.23** Scale formulas for writing songs in major or minor

Try to identify or perform the following items in the song:

1 How many riffs are there?

Hint
Continue listening after the sung part of the chorus.

2 Can you perform the drum part in the chorus using body percussion?

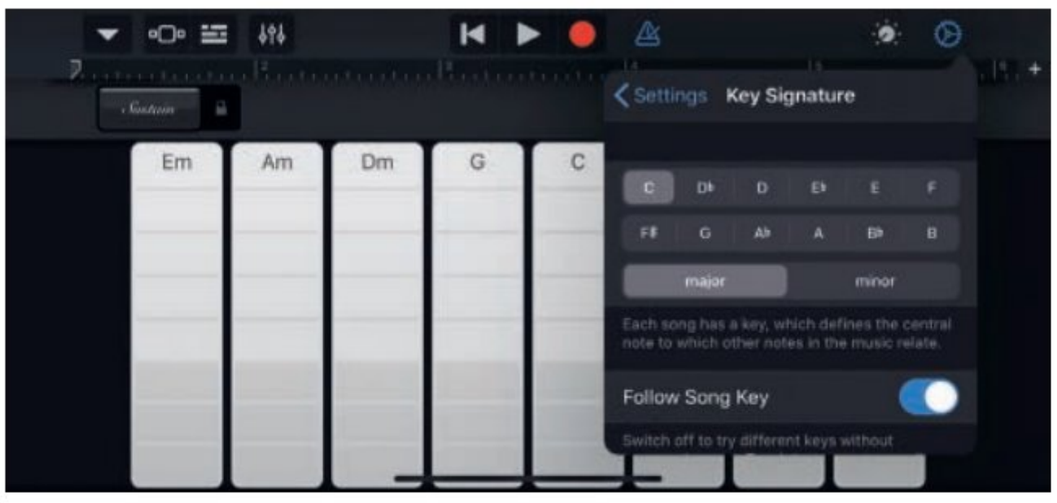
ACTIVITY: Chords in rock and pop (part 2)

ATL

■ Transfer skills: Applying skills and knowledge in unfamiliar situations

Using our listening skills and the two scale formulas we have studied so far, we will sketch out the beginnings of our very own rock and / or pop song.

1 **Using the chords from the last activity, decide whether you want to be in a major or minor key.**
2 **Once you have chosen your key (C major or A minor, for example), play through each of the chords on a keyboard or guitar or using the *Smart Instrument* options on GarageBand.**



■ **Figure 4.24** Major or minor scale formulas can be arranged automatically on GarageBand for iOS

3 **Using the grids below, sketch out how you want your chords to be performed. Decide in which order they will go for the verse of 8 measures and chorus for 4 measures.**
4 **Refer to the model pieces we have studied as examples to experiment with.**

Verse:	_____	_____	_____	_____
	_____	_____	_____	_____
Chorus:	_____	_____	_____	_____

Remember: using your ears and instruments to listen is the best way you create progressions from the formulas in Figure 4.23.

You have just written the skeleton of an original song.

Now play it and start to think of which drum pattern you will use.

Assessment opportunities

In this activity you have practised skills that are assessed using Criterion B: Developing skills and Criterion C: Thinking creatively.

Portfolio presentation

Case study 5: Coldplay

The band Coldplay was under fire for a seemingly obvious case of plagiarism brought forward by guitar virtuoso Joe Satriani in 2008. Coldplay's massive hit 'Viva La Vida' grossed over 4 million in downloads and was the band's first number 1 single in the US and UK. Listen to it and the 80s-style rock track by Satriani 'If I Could Fly' from the album *Is There Love In Space* on the playlist. Wait for the chorus, as this is the part allegedly copied by Coldplay. Our minor scale formula from Figure 4.23 will be very useful in this comparison.

The New York Times (17 September 2009) reported that the claim was later dropped but that it was most likely settled out of court. What are your thoughts after the case against Ed Sheeran?
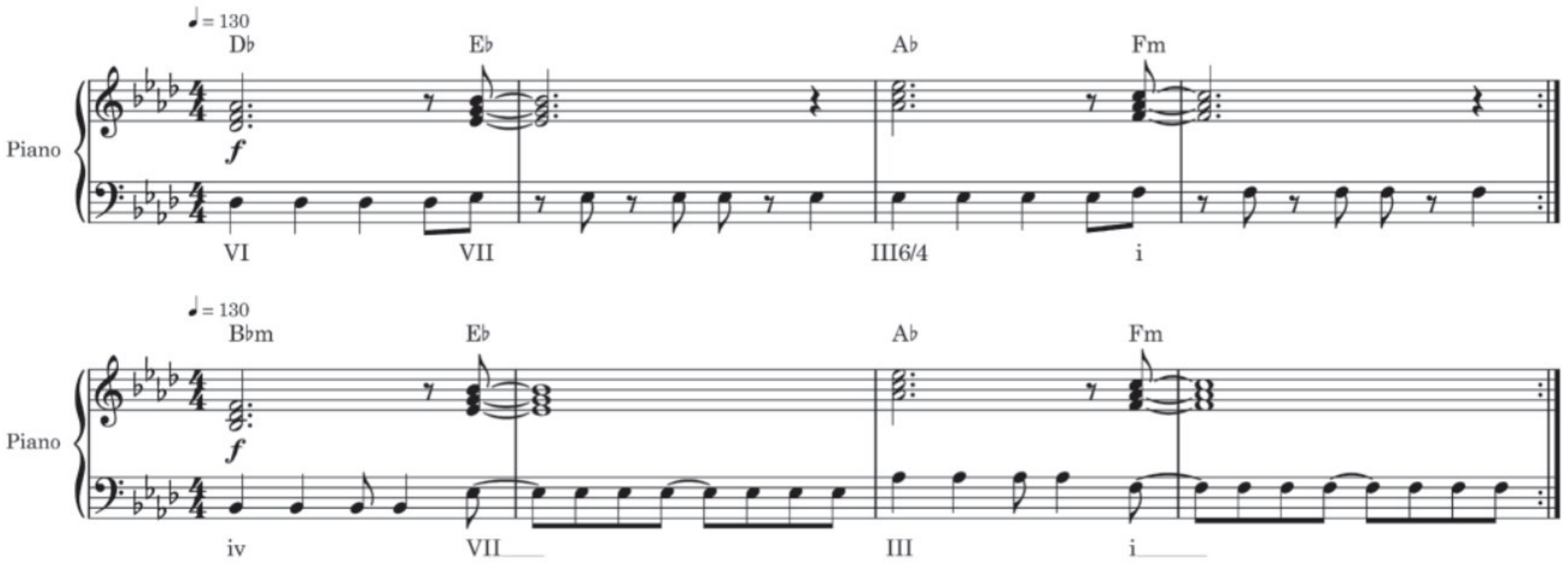
Turn to a partner and together write down:

1 everything that supports Satriani's claim of plagiarism

and

2 everything that supports Coldplay's claim that it is was an original composition.

Using musical evidence in the form of melodic and rhythmic material, speculate who could have won this case if you could have presented your evidence to the jury.



■ **Figure 4.25** 'Viva La Vida' and 'If I Could Fly' chord comparison

Listening strategically: Get an IDEA

Chord analysis with **www.hooktheory.com** can be an incredible learning opportunity. There are many common chord progressions that are shared by songs across genres and decades. Use this link: **www.hooktheory.com/theorytab/common-chord-progressions** to listen to some of the most common chord progressions.

When you listen to each song, try to think of the acronym of **IDEA** to help you write down observations that identify the shared musical features of each style:
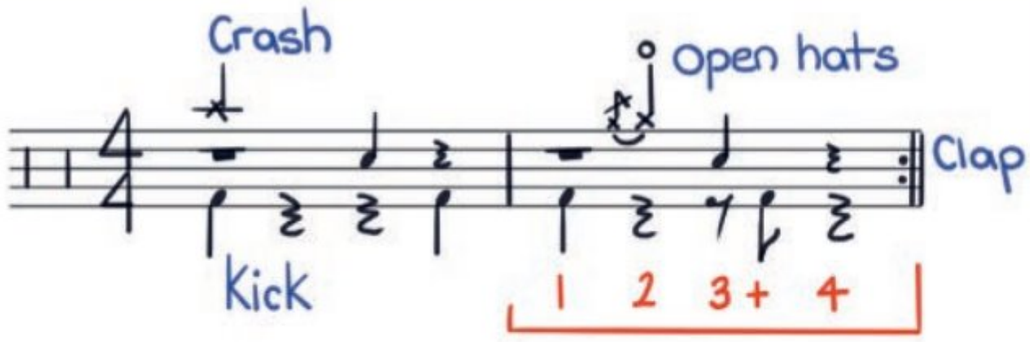
Identify the melodic, rhythmic and structural details of each song.

Describe how the bass lines, riffs, ostinatos and chords are performed.

Explain what role each part plays in the musical whole. Which features act as a 'glue' to keep the work together and moving forward? Does anything change? If so, how?

Analyse the smaller parts (intervals, **motifs**, **sequences**) to their larger outward parts of form, modulations, phrases and **cadences**.

Which musical features define a style?



■ **Figure 4.26** Drum pattern sketch inspired by 'While We're Young' by Jhené Aiko

WHAT'S IN A BEAT?

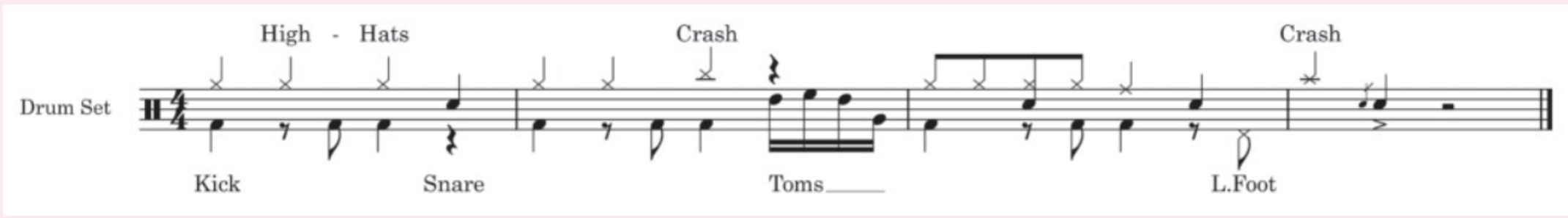
Music exploration: Notating drums

Percussion has always been a dominant feature of rock music, and with the creation of the 808 drum machine in the early 80s, the sounds of kicks and snares have continued to develop in popular genres. We now have access to so many beat-making tools that everyone can create a beat. In this section, we will investigate what goes into performing with drums, how they provide the power to 'lock in' with the band and what exactly are the different patterns required for the styles we love.

Drums are meant to be performed. However, we also want to push the idea of what is creative – finding new ways to connect to the audience. Figure 4.27 breaks down the main components of a traditional rock beat in standard drum notation.

To see what this looks like with actual songs, research websites that offer free transcriptions of drum parts. For example, The Drum Ninja at **http://thedrumninja.com/drum-transcriptions**

What this leads to is finding different tracks online that you can transcribe (or notate parts from) simply by listening to them. Listen to Jhené Aiko's 'While We're Young' or watch the clip on YouTube: **https://youtu.be/LjvwRSKVQNs** as you follow Figure 4.26, inspired by the drums in the track.



■ **Figure 4.27** Example of notating drums in a rock style

Hip-hop is an evolution of rhythm and blues, soul, rock, gospel and more. Along with the art of sampling, the rhythmic components that make up this genre are amazing when seen visually. Charlie Hely is the creator behind **https://hiphoptranscriptions.com**, and he uses a pen and ruler to transcribe rhythm visually. Investigate this website and choose an example to add to your portfolio.

1. Start programming your own beats right now with a web app called Patatap: **www.patatap.com** or Drumbit **https://drumbit.app**
2. Sit with a partner and develop a groove of 4 to 8 measures. Use the web apps or **https://hiphoptranscriptions.com** for inspiration.
3. Record or draw the beats made by you and your partner to add to your portfolio.

ACTIVITY: EDM drum mapping

ATL

- Communication skills: Using a variety of media to communicate with a range of audiences

By mixing traditional notation and a grid-style map that you are more likely to see in digital audio workstations Logic Pro X or Ableton, we get to contrast many different styles of electronic drum beats. Get your portfolio ready and take notes on how you can **identify** most genres from their beats!

Part 1: House music

Below is the generic pattern for a *house music* beat. Each layer of the drum kit has been rendered into a grid format of quavers (8th notes) that you read from left to right, for a 4-measure group.

Part 2: World influences

Tropical House is just one variant of *house music* made popular by artists Thomas Jack and Kygo. It has a drum pattern similar to reggaetón (a style that is a mixture of Latin American, hip-hop and Caribbean music). *Tropical house* sticks to the dominant kick on each down-beat, adding percussive sounds on individual 16th-note spaces (semi-quavers) in each measure. See **https://splice.com/blog/tips-to-for-producing-tropical-house**

Part 3: Transfer to body percussion

In groups of four, choose one of these rhythms to perform as a percussion ensemble. Divide the kick, snare, hats and other effects among different performers. Your aim is to hold the entire beat as a loop, while playing *only one part each*. Reflect on how well you achieve this.

Rhythm is very important and even the smallest change produces a different groove.

Assessment opportunities

In this activity you have practised skills that are assessed using Criterion A: Knowing and understanding and Criterion B: Developing skills.



Figure 4.28 *House* pattern drawn in software called Ableton Live

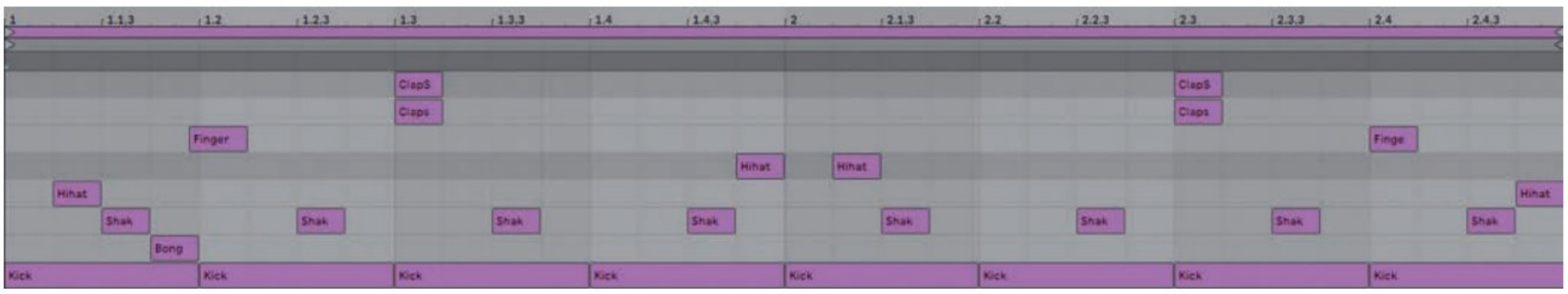


Figure 4.29 *Tropical house* beat drawn in Ableton Live. Notice the use of extra percussion in the grid

How do we analyse music from different genres?
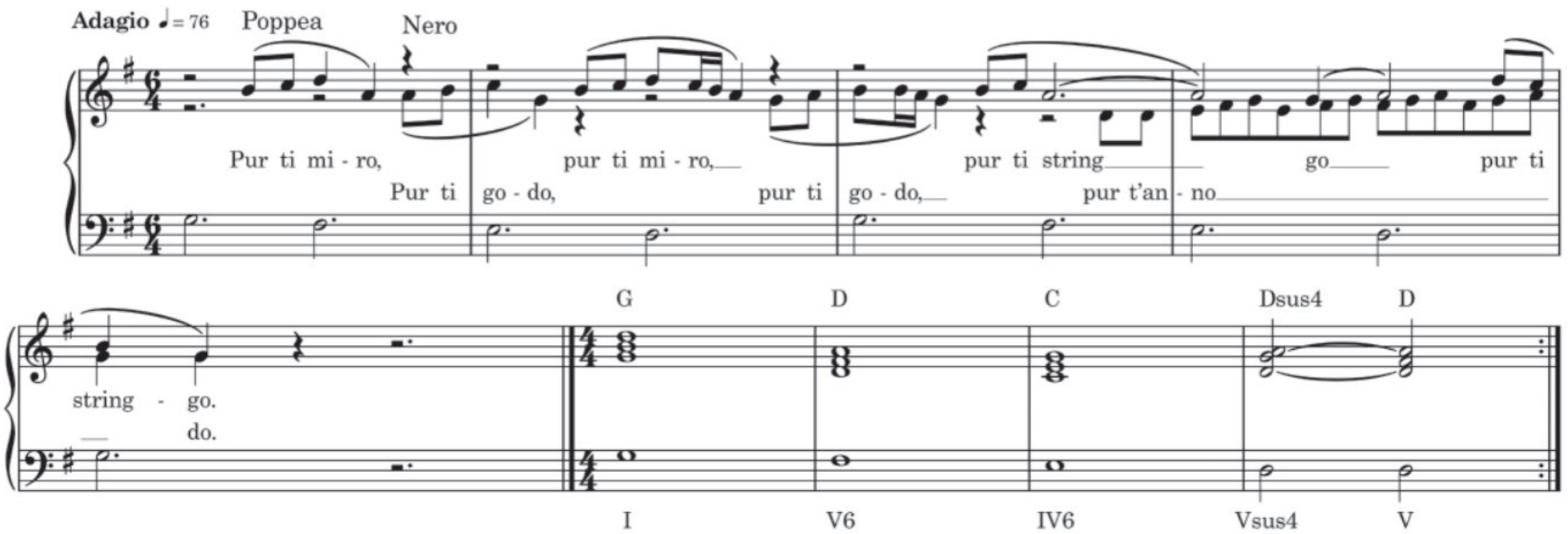


■ **Figure 4.30** Duets

DUETS, LOVE SONGS AND COLLABORATIONS

What is a duet? A duet is a piece of music for two performers with often equal and **complementary** parts. Many musicals, operas, rock ballads and other ensemble combinations are written for two singers and / or performers. The singers in an opera, for example, will be singing their parts, while harmonising with each other. What we will be examining is an early operatic duet by Claudio Monteverdi (1567–1643) from his last opera *L'incoronazione di Poppea* (1643) 'Pur To Mio' and the 1990s pop group Savage Garden's 'Truly Madly Deeply'.

The concept of a love song is not new; however, in Italy in 1643 the final act of Monteverdi's opera delivered such an incredible duet between the characters of Nerone and Poppea that it still captures audiences' imaginations with its sensuous phrases. Monterverdi used the *basso continuo* technique (with figured bass) to maintain a descending bass line with chords that followed a simple harmony of I-V-IV-V. Over this, the two singers twist their phrases around each other as they declare their love: 'I gaze at you, I tighten closer to you, I delight in you…' The best thing for us to observe is how all of the notes are within what we call a **close range**, making it easier to follow. Watch the score performance on YouTube: **https://youtu.be/6eA7aDYflc4** or listen to it on the playlist.

Jump forward to the duo known as Savage Garden, with their 1997 hit song 'Truly Madly Deeply', and we find a very different set of lyrics with the same chord progression. 'Truly Madly Deeply' is a typical love ballad, complete with electronic drums, sustained piano and high-pitched male vocals (it just screams 90s pop material). The entire song is built around the same chord progression as 'Pur Ti Mio' but it is missing that second duet line.



■ **Figure 4.31** 'Pur Ti Mio' progression with harmony outline and descending bass

ACTIVITY: Monteverdi to Savage Garden

ATL

- Information literacy skills: Making connections between various sources of information

1. Using an application like MuseScore or even by playing in the chords below to GarageBand or SoundTrap, add a second melody line to the first phrase of 'Truly Madly Deeply'.
2. You can use parts of Monterverdi's duet, or repeat smaller groups of notes higher or lower, as presented in both songs.
3. Use the score example below to complete your task and share it with a friend for feedback.
 a. Does your new melody work with the chords and original tune?
 b. Were you able to repeat smaller groups of notes within a small range?
 c. How would you write your own duet with these materials?

Assessment opportunities

In this activity you have practised skills that are assessed using Criterion B: Developing skills and Criterion C: Thinking creatively.
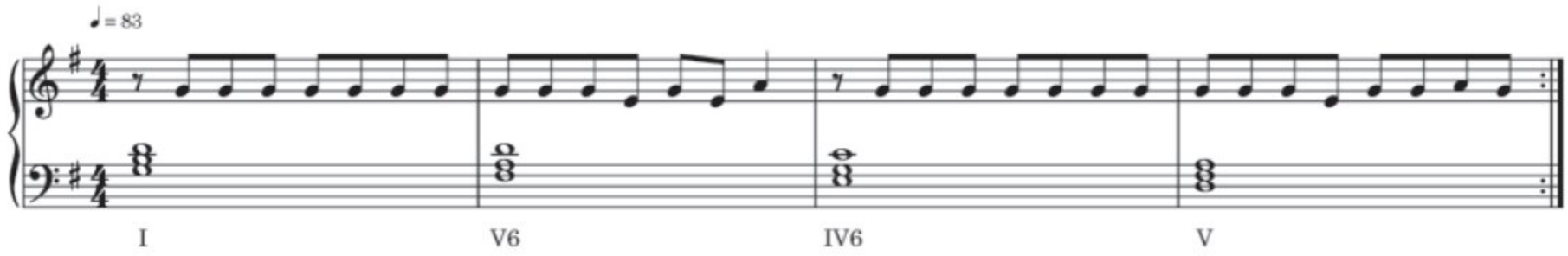


Figure 4.32 'Truly Madly Deeply' duet task over the first four measures of I-V-IV-V

MEET THE ARTIST: DIPLO (FEATURING JUSTIN BIEBER)

Diplo is an American DJ who is also a part of the duo named Jack Ü with Skrillex. His collaboration with Justin Bieber on the song 'Where Are Ü Now' is a fantastic listening example that outlines a progression similar to Monteverdi and Savage Garden, but with a rhythmic shift.

Diplo uses C-Eminor-D-G and manages to play the chords off the main beats (*syncopation*). His music features smooth transitions, synths and plucks that all connect with a tropical house beat and high-pitched vocals. You can investigate deconstructing this track further at **https://remakespro.com**
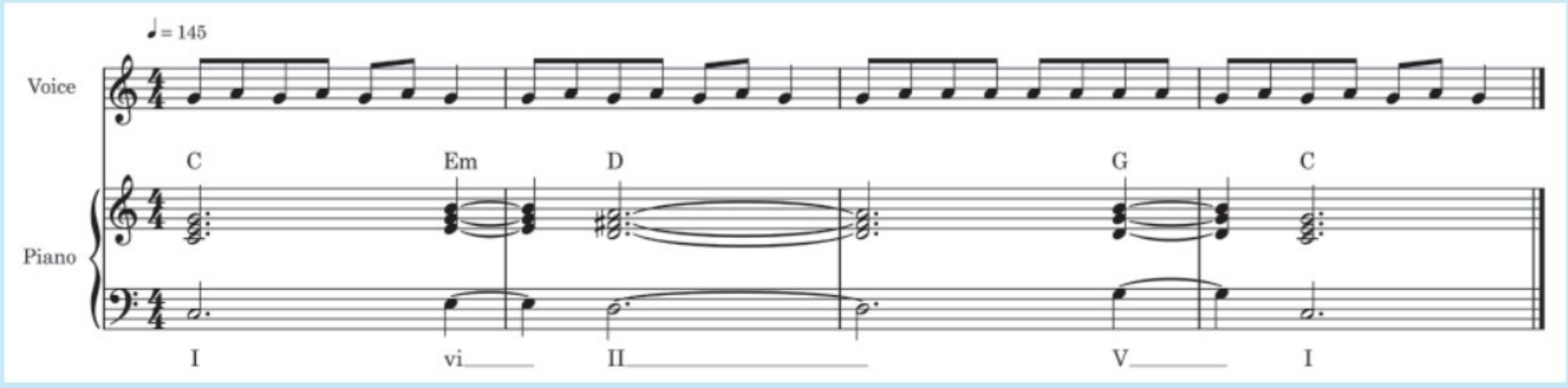


Figure 4.33 'Where Are Ü Now' measures 1–4 in C. Notice that the chords are syncopated.

To what extent is imitation a good thing?



■ **Figure 4.34**

THE PHENOMENA OF ROCK AND POP

Portfolio presentation

Case study 6: *Bitter Sweet Symphony*

'Bitter Sweet Symphony' by The Verve is a definitive British single of the 1990s. Its string-driven motif with drum kit and added rock elements reached number 2 in the UK. It was then nominated for a Grammy for best rock song in the US. With lyrics written by Richard Ashcroft in 1997, the story goes that the band obtained rights to use a sample from an orchestral arrangement of The Rolling Stones' 'The Last Time' (1965). However, The Rolling Stones' former manager Allen Klein claimed more of the sample was used than was agreed to, thereby voiding the licensing agreement. The Verve did use the sample, but re-**orchestrated** it with other musicians, thereby altering it slightly. As a result of two lawsuits against them, The Verve lost all song-writing and publishing rights for 'Bitter Sweet Symphony'. Yet, as of 23 May 2019, all rights were returned to The Verve as a goodwill gesture from The Rolling Stones:

> *"Mick Jagger and Keith Richards signed over all their publishing for 'Bitter Sweet Symphony', which was a truly kind and magnanimous thing for them to do."*

There is nothing to analyse with this case study, yet there is a series of questions to discuss and debate. Get into groups of three or four students and assign each person one of the following questions:

1. What does it mean to use ideas 'fairly' in the modern world?
2. How can someone identify similar musical features within a song or track?
3. Is changing a sample, from someone else's music, inspiration or just copying?
4. Is it possible to change one original idea into a new original idea?

Write down your answer on a sheet of paper without discussing it with anyone else in the group. When you have all written down an answer, move to another question and add your opinion to the first person's answer. Continue this process until everyone has had a chance to comment on the four questions. Step back and evaluate together:

What did we agree on? What did we learn? What can we research further?

ACTIVITY: Altering the 12-bar blues

ATL

- Transfer skills: Inquiring in different contexts to gain a different perspective

Japanese rock and pop is a specific branch of the 'rock tree' that incorporates many styles into a single genre. It blurs the lines between the type of guitar-driven rock featured in Pink Floyd, the fusion of The Mahavishnu Orchestra, and even the Romantic-era piano of Schubert. There is a distinctive sound that listeners will be able to **identify** as 'Anime' or 'J-Pop', and that is what we will be **exploring**.

The blues is a form of music that has been pioneered by performers such as Robert Johnson, Muddy Waters, John Lee Hooker, B.B. King and Eric Clapton throughout the 20th Century. Its progression follows a grouping of the chords I, IV and V:

I	I	I	I	IV	IV
I	I	V	IV	I	I or V7

Now listen to the track 'Tank!' from the anime *Cowboy Bebop* by The Seatbelts and composer Yoko Kanno (1998) here **https://youtu.be/gg0aZvaiJjU**. Can you identify the blues structure in the track? The combination of the funky drum part, bongos, bass-line ostinato and riffs all point to an interesting twist in the structure:

i	i	i	i	iv7	iv7
i7	i7	V+ (aug)	VI+ (aug)	i	V

You should notice two things: **a** the use of the minor key with the lower-case Roman numerals and **b** the augmented chords that have replaced chords V and IV in a traditional blues.

In your class perform the excerpt of 'Tank!' with bass ostinato and percussion parts. Can you perform each layer, live?

Assessment opportunities

In this activity you have practised skills that are assessed using Criterion A: Knowing and understanding and Criterion B: Developing skills.
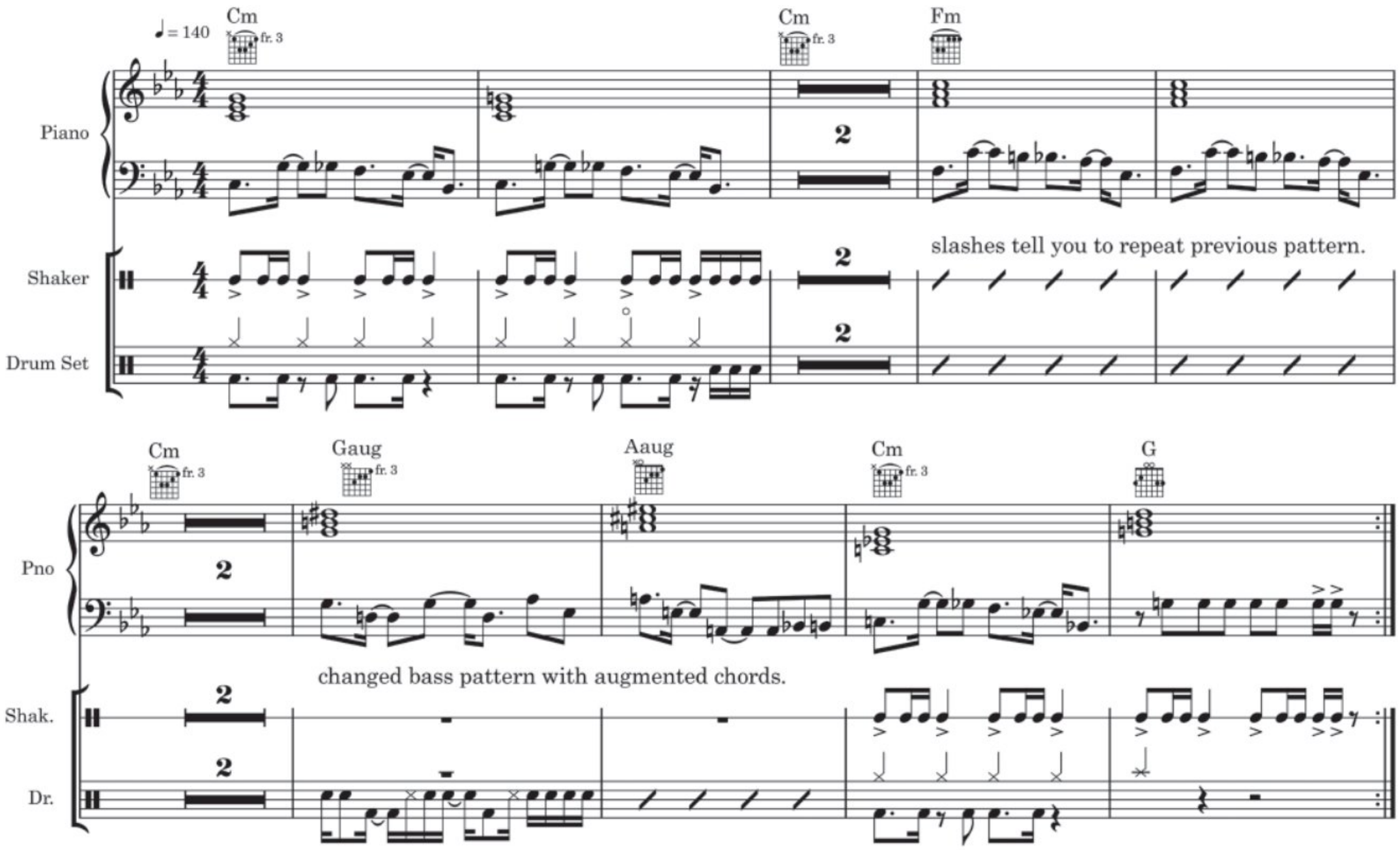


Figure 4.35 Classroom version of 'Tank!' for performance

ACTIVITY: The Japanese chord progression

ATL

- Transfer skills: Changing the context of an inquiry to gain different perspectives

Japanese rock, pop and anime have very interesting chord progressions. Whereas the music we have been analysing and listening to uses mostly 4 chords, the music you are about to listen to can have 4 or 9 chords in a row, with extensions, and even change chords from major to minor. There is one progression however that is used throughout Japanese rock and this is a combination of a **IV-V-iii-vi** progression (remember the formulas?). Listen to 'Ignite' by Eir Aoi and 'Catch the Moment' by LiSA on the playlist as we **create** with the examples below:

1. **Enter the IV-V-iii-vi progression into a notation program for piano.**
2. **Make a list of any riffs, bass lines or ostinato patterns that you can identify in the tracks. Which instruments are playing them?**
3. **Notate your own riff or repeated pattern over the 4 chords. It can be for guitar, piano or bass.**

Hint

Try to copy and repeat chord tones to write your riff.

After you have created your riff, reflect on the cases we have studied. Could Japanese rock and pop hold the answer to creating original chord progressions?

Assessment opportunities

In this activity you have practised skills that are assessed using Criterion B: Developing skills, Criterion C: Thinking creatively and Criterion D: Responding.

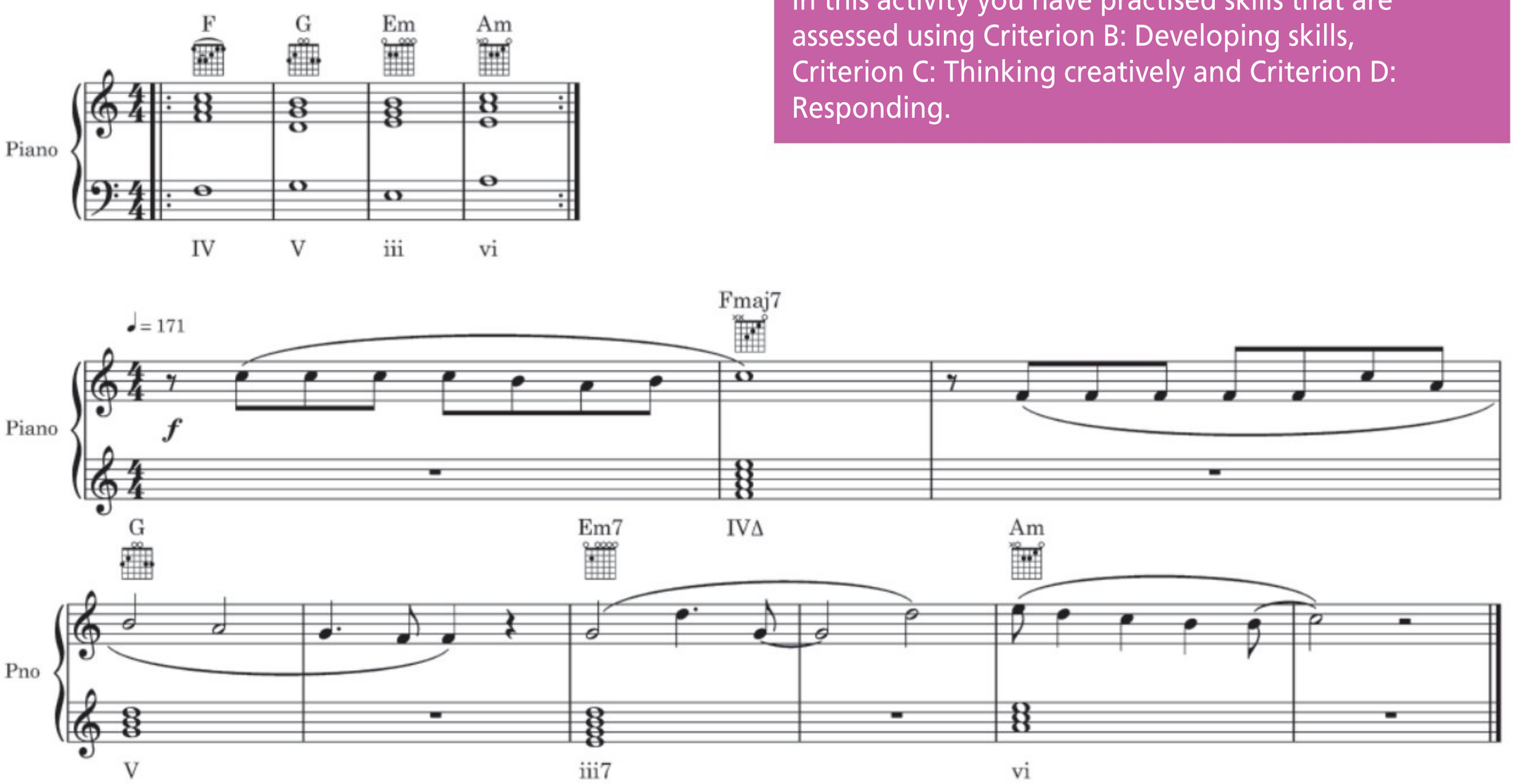


Figure 4.36 'Ignite' IV-V-iii-vi progression and melodic phrasing

Can an artist ever claim inspiration as original?



■ **Figure 4.37**

MEET THE ARTIST: HATSUNE MIKU, THE VIRTUAL POP STAR!



■ **Figure 4.38** Hatsune Miku

Hatsune Miku is a singing voice synthesiser package based on a software engine by Yamaha called Vocaloid. The package is developed by Japanese company Crypton Future Media, INC. Anyone who downloads the software can create their own songs with Miku's voice by simply typing in a melody and lyrics! Hatsune Miku was featured in thousands of songs, such as 2008's 'World is Mine' by ryo (supercell) (available on the playlist). Visit **www.piapro.net** to see how it works for yourself.

THINKING OUTSIDE THE BOX

Portfolio presentation

Case study 7: *Let it Go* from *Frozen*

The composer of 'Volar' (2007) definitely did not want to let this one go. In 2017 the plaintiff, here composer Jamie Ciero, alleged that the incredibly successful 'Let it Go' from Disney *Frozen* and his 'Volar' included '… note combinations and structures, hooks, melodies, lyrics, themes, production, and textures that are at least substantially similar.' From our studies, taking such a sweeping view of the two songs could result in weeks of comparison and analysis; it was too broad a claim. After three more attempts at presenting his case, in 2018 Ciero argued specific musical parts of similarity: the harmonic progression and melodic **fragments** in both works.

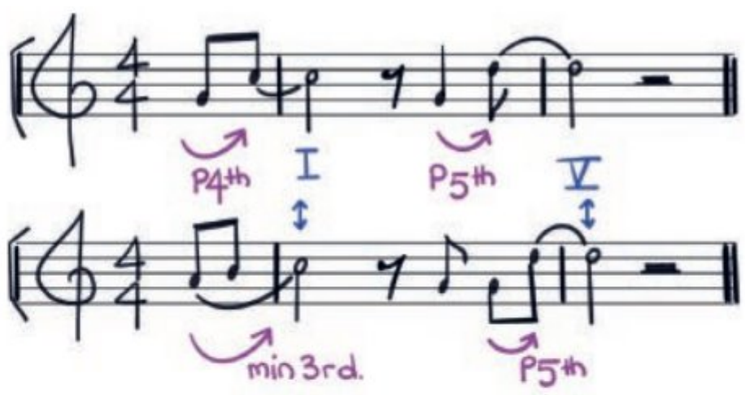
1 Listen to both works on the playlist. Use the acronym **IDEA** to sketch out a diagram of analysis for both pieces.

2 In pairs, discuss the elements that you find to be similar or contrasting. Focus particularly on the chord progression that they both share of I-V-vi-IV in the chorus.

3 Using the two melodic fragments in the question below, discuss with a partner the similarities in intervals and shape.

What was your final decision from a musical comparison?

By now you will be starting to see a connection between the intervals, melodies and chords of popular songs and how audiences react to certain combinations of sounds. Does this limit what can be called *original*?



■ **Figure 4.39** Melodic hook comparisons at the start of the chorus. Can you spot which is which?

ACTIVITY: Sampling is a thing now (part 1)

ATL

- Media literacy skills: Communicating information and ideas effectively to multiple audiences using a variety of media and formats

Sampling is the art of recording audio digitally, and then incorporating them into your own creations. You can **use** an application like Spire from www.izotope.com/en/products/record/spire-studio.html on any device to record the train, pigeons or noise in the kitchen to **develop** your own sample packs. The rise of music technology and the ease with which anyone can sample, has made music production a popular trend of the 20th–21st Centuries. Listen to an iconic rock track from Pink Floyd that begins with a series of samples arranged into the **time signature** of 7/4.

1. **Listen to 'Money' on the playlist.**
2. **Sketch in your portfolio each crotchet (quarter) beat and a description of the sound on that beat.**
3. **The bass line is a repeated ostinato also in 7/4. Can you work it out on an instrument?**
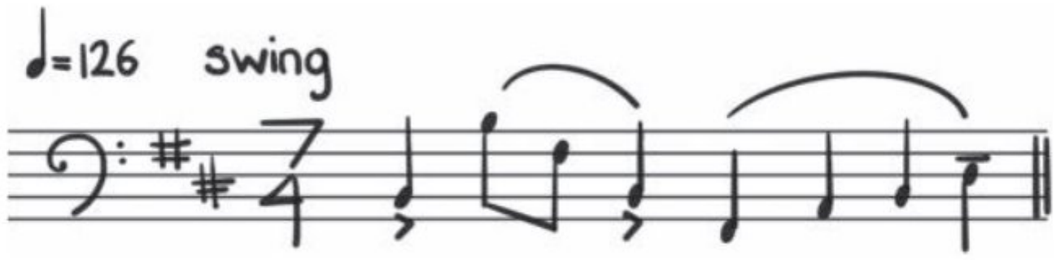


Figure 4.40 'Money': Pink Floyd; riff in 7/4

Pink Floyd's idea to use everyday sounds to reinforce their riff was clever. The website www.whosampled.com **outlines** the music we listen to today, and every sample included in those tracks.

If we took Childish Gambino's 2016 R'n'B soul track 'Redbone', with its bare drums and melodic pattern, www.whosampled.com shows he sampled the groove and melodic bell from Bootsy's 'I'd Rather Be With You'. Listen to the two versions and discuss them as a class. What is similar? And what has been changed?

Assessment opportunities

In this activity you have practised skills that are assessed using Criterion D: Responding.

ACTIVITY: Sampling is a thing now (part 2)

ATL

- Media literacy skills: Communicating information and ideas effectively to multiple audiences using a variety of media and formats

Another artist who has shown himself to understand the power of sampling is Kanye West. His track 'Power' takes a sample from the progressive-rock band King Crimson's '21st Century Schizoid Man' and transforms it into a driven anthem of percussion and looped phrases. Both tracks are on the playlist, and the opening riff clearly repeats itself three times before adding in a change for the 4th bar, which is the sample!

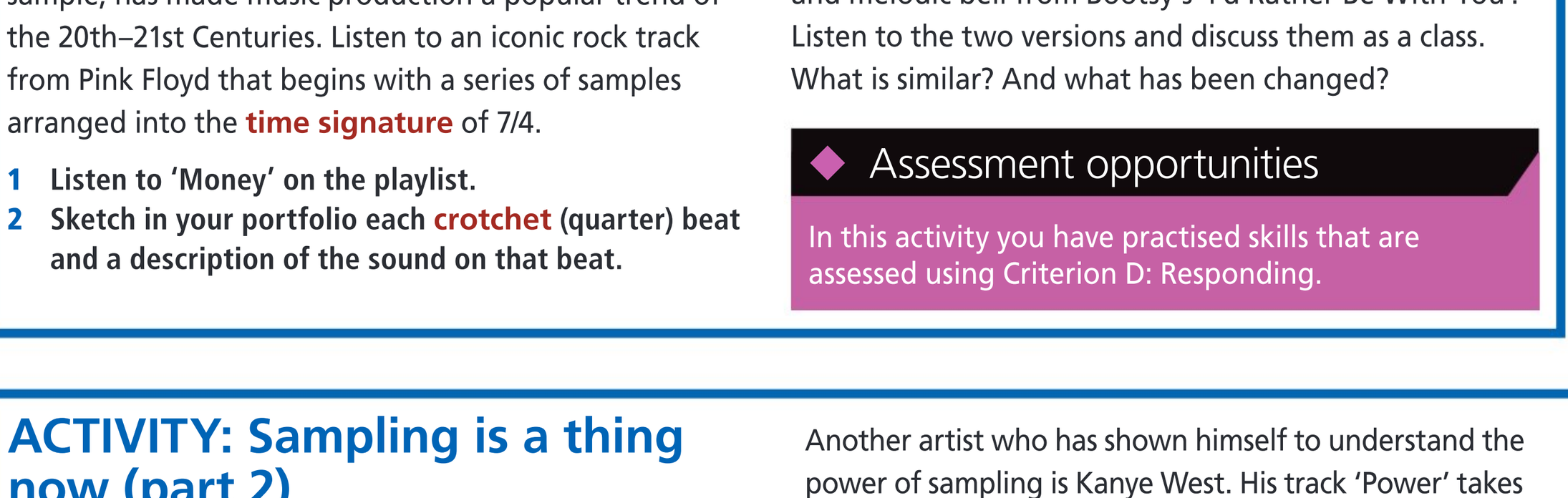
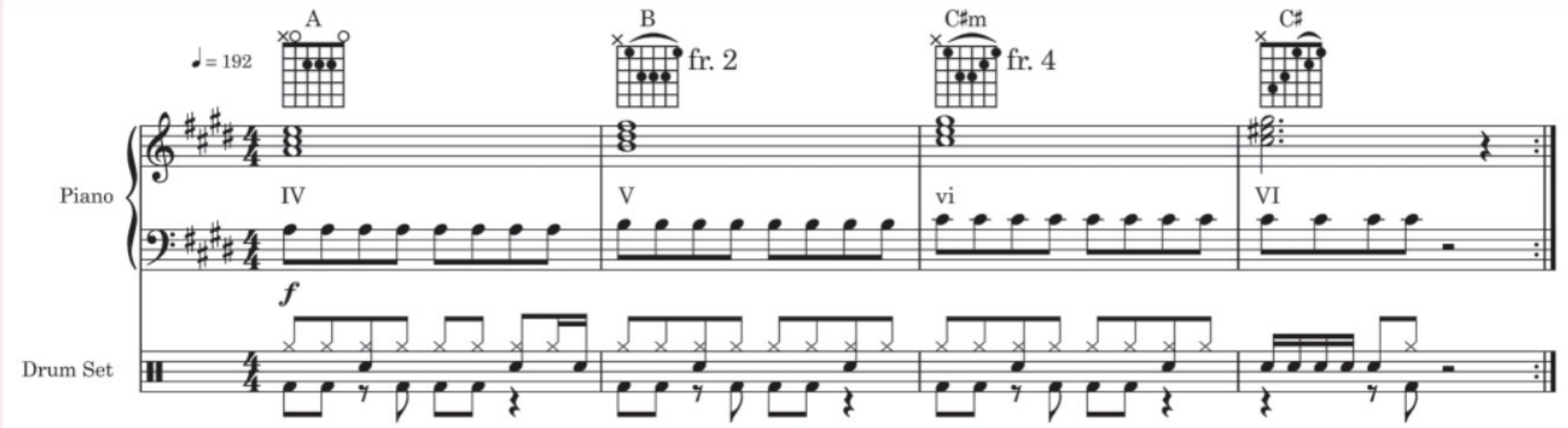


Figure 4.41 Kanye West's 'Power' opening 8-measure hook with sample in measure 8

Music exploration: More Japanese progressions

Extending ourselves from the previous activity that involves Japanese star LiSa, this time we will experiment with another one of her songs, 'ADAMAS'. The aim here is to notate one of the 4-measure chord progressions from the first introduction, and then make something new.

1. Notate the chords into MuseScore or an app like Symphony Pro on iOS.
2. Listen to the progression and, using chord tones (remember: notes from the chords), create a riff or hook that can repeat in small phrases over the entire progression.
3. Loop the progression as many times as is needed.
4. Demonstrate your creation to a friend and ask for their feedback.



■ **Figure 4.42** 'ADAMAS' first opening measures using Japanese rock progression of IV-V-vi-VI. Yes, there is a twist at the end with a minor to major chord!

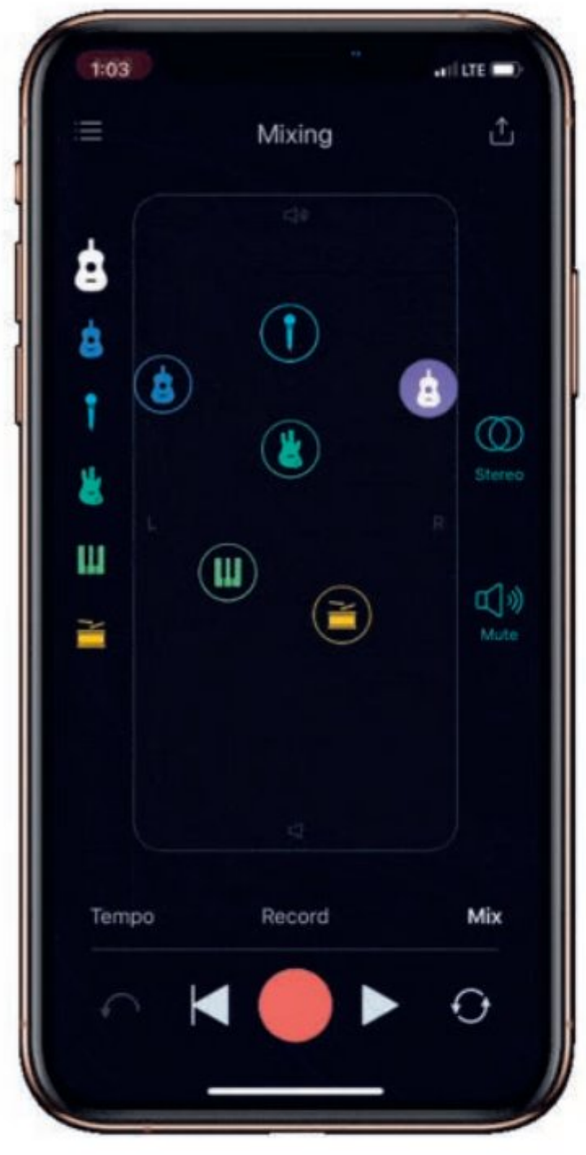
There is quite a history of hip-hop sampling rock tracks, but what about making one yourself?

1. **Kanye uses a simple repetitive snare hit on each crotchet (quarter-beat). Using your device, record a series of sounds that you can transfer to software like GarageBand and / or SoundTrap.**
2. **With these samples (pen clicks, chair scrapes, door locks, and so on), place them on each downbeat in a time signature of 4/4.**
3. **Now, using the examples of Pink Floyd, Gambino and Kanye, develop a 4–8 bar riff in any instrument that repeats exactly, until the last two measures. Here add a small variation.**

You have just **created** your own sample-infused work! **Present** it as a sound file or notate it to document in your portfolio.

◆ Assessment opportunities

In this activity you have practised skills that are assessed using Criterion B: Developing skills and Criterion C: Thinking creatively.



■ **Figure 4.43** Use your phone or device to download the software app SPIRE and get started with free projects at www.izotope.com/en/learn/download-free-spire-starter-projects.html

Does the audience have the final say on what is good?



■ **Figure 4.44**

Listening strategically: Get an IDEA

To become a good song-writer you need to become a good listener. But the level of listening required needs more than identifying chords. You need to investigate different melodies, investigate how artists approach their phrases and hooks and, even then, know how to make it sound original. Visit the YouTube channel Holistic Songwriting at **https://youtu.be/sjnz002F_bA**, where you can learn how to write melodies and progressions like artists such as Taylor Swift, Ed Sheeran, 21 Pilots, and more. You will begin to identify techniques such as the one-note or 3rd-based melody, and how shifting a simple rhythm can create an entirely new feel to a progression. As you watch these videos, take notes and / or screenshots as documentation for your portfolio.

THE POWER OF THE MINOR SCALE

Portfolio presentation

Case study 8: Radiohead's *Creep*

The band Radiohead is known globally for their rhythms, interesting melodies and ingenuity with harmony. Yet as we have seen, music is a tricky worm that gets stuck in your head and can lay dormant for years until you write that one hit song, and then you discover someone else did it first!

In 2018, Radiohead sought damages against Lana Del Ray for the similarity 'Get Free' has to their 1992 single 'Creep'. Yet it turns out 'Creep' also has similarities to The Hollies' 1974 hit 'The Air That I Breathe'. Ultimately, songwriters Hammond and Hazlewood were granted co-credit on the Radiohead track due to the song's similarities, but this case presents an interesting problem.

Discuss: If musicians are continually inspired by other artists and innovations in the industry, what room is left for those still developing their craft? In this and other cases, fans have come forward to question the lawsuit and even commented that artists should instead choose to share creativity. What are your thoughts?

Research and document this case yourself in your portfolio:

1. Discuss this article from *The Guardian*: **www.theguardian.com/music/ng-interactive/2018/mar/26/did-lana-del-rey-plagiarise-radiohead-note-by-note-analysis**
2. Compare the melodic and harmonic material of 'Creep' and 'Get Free'. Are there any similarities?
3. Finally, analyse the three songs using the method of **IDEA**. Then compare your findings.

Throughout each case study, you have contrasted, analysed and formulated arguments. What has deconstructing these songs taught you?

ACTIVITY: Writing a minor progression with a melody (part 1)

ATL

- Communication skills: Using appropriate forms of writing for different purposes and audiences

This activity will have you playing with and creating chords, but don't forget to refer back to the chord formulas in Figure 4.23.

From the music we have investigated, songs tend to sound similar to each other because of standard chord progressions. This had led to artists borrowing chords from other 'chord formulas' or keys, to give their music variation. Radiohead's *Creep* is a perfect example of a song in G major: G (I)-B (III)-C (IV)-Cm (iv) that includes a borrowed B major and C minor chord that are not a part of the standard major formula. You can see it also changes the final two chords from major to minor.

1 Metallica: *Nothing Else Matters*

Metallica are known for their metal-driven riffs in 4/4, and yet when the band released this song in 1991 it quickly became one of their best-known songs. It is in the key of E minor and uses a 6/8 compound time signature. As you listen to the track, count 1 2 3 / 4 5 6 to feel the pulse of the verse. The chords clearly follow the minor chord formula:

Em (i)	D (VII) / C (VI)	Em (i)	D (VII) / C (VI)
Em (i)	D (VII) / C (VI)	G (III) / B7 (V7)	Em (i)

2 Taylor Swift: *Look What You Made Me Do*

Taylor released her track in 2017 and it was played 43.2 million times in just its first 24 hours. Clearly this song connected with its audience, with its repeated melodic figure in the key of A minor:

Am (i)	Am (i)	F (IV)	E (V)

3 Foo Fighters: *Pretender*

***Pretender* was released on the 2007 album *Echoes, Silence, Patience & Grace*, with a distinctive fusion approach to rock and blues. The song starts out with a descending bass line in A minor that explodes into a rock riff for the verse. The chorus revisits the introduction with syncopated chords over steady quavers (8th notes).**

i (Am)	i (Am)	Em (v) / C (III)	Am (i)	IV (D)	IV (D)	VI (F)	VI (F)

Hint

Play through each of the chords above and look them up on www.hooktheory.com/theorytab/view/foo-fighters/the-pretender. Then, research the main riffs of each track. The more you play them, the more you open yourself to inspiration.

Assessment opportunities

In this activity you have practised skills that are assessed using Criterion B: Developing skills and Criterion D: Responding.

ACTIVITY: Writing a minor progression with a melody (part 2)

ATL

- Communication skills: Using appropriate forms of writing for different purposes and audiences

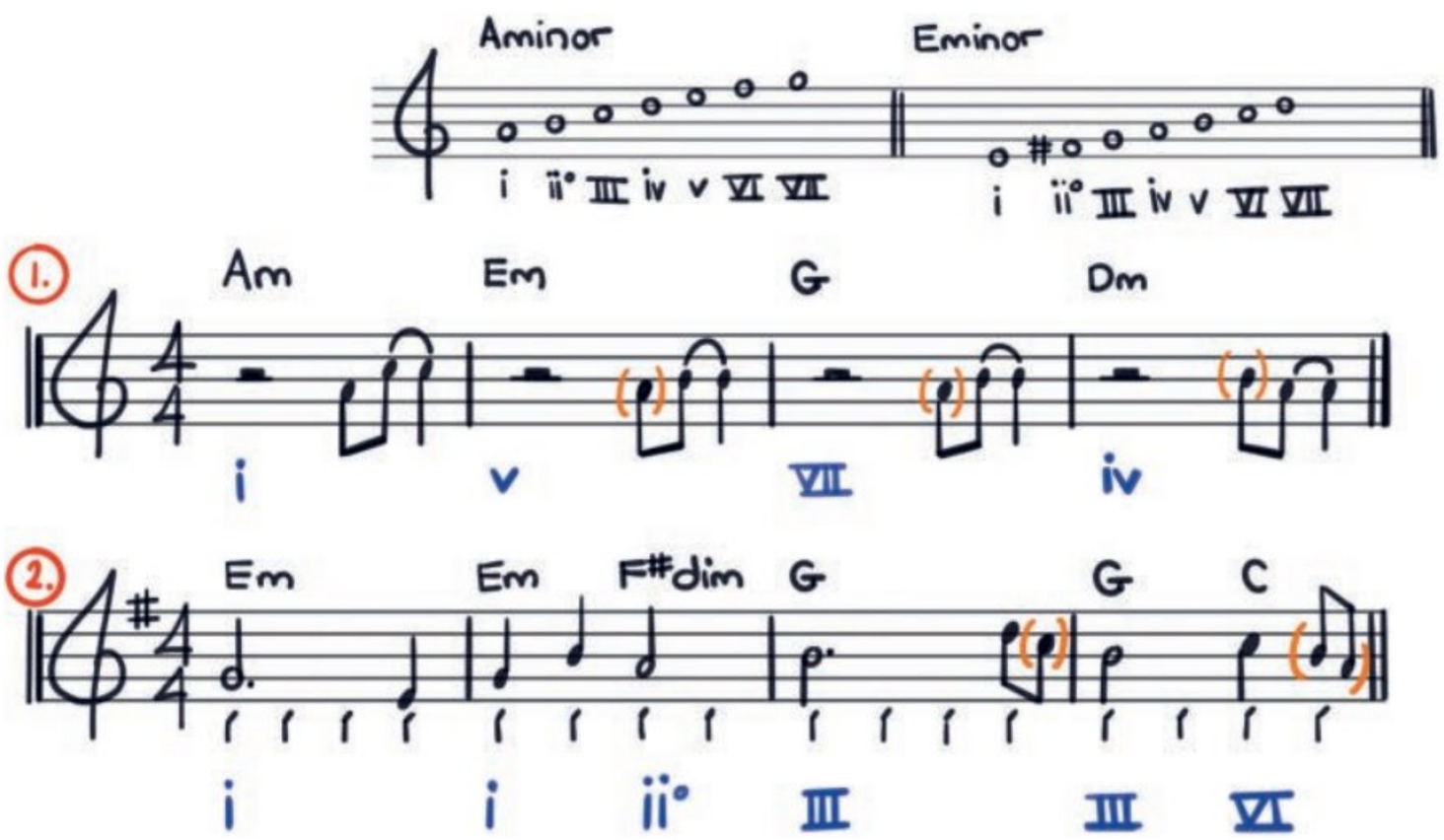
We will now **use** our active listening to write our very own song, in a minor key. Follow the directions below to get started, and don't give up!

1. **Pick four chords in the key of A minor, or E minor, to be your *progression.* Use the chord formulas in Figure 4.23 to get started.**
2. **Write out the formulas in MuseScore or an app like Symphony Pro, building the triads on top of the A or E-minor scales. These will become your roadmap to finding good combinations.**
3. **Using chord tones (the notes of each triad), add in simple melody notes for each measure. For example, A minor uses a-c-e. Keep it simple, with small steps and leaps only.**
4. **Finally, in your notation app, experiment with connecting the chord tones with what we call passing notes. These are notes that join the chord tones together, and you can use quavers (8th notes) to do this.**

It may not reach the next top 10 in the charts, but you have just written an original melody with chords in a minor key.

Assessment opportunities

In this activity you have practised skills that are assessed using Criterion B: Developing skills and Criterion C: Thinking creatively.



■ **Figure 4.45** A and E minor progressions with example chord-tone melodies, and passing notes bracketed

Take action

- Find out what features make up the musical genre called *rock*, and where they came from.
- Explore the possibilities of breaking down music into its basic components, to build it into new and original forms.
- Solve actual court cases of copyright law, to understand and avoid plagiarism when creating your own music.
- As a service to your senior musicians, organise a 'Music Plagiarism Panel' that can meet to listen, discuss and critique diploma compositions or higher-level projects. The panel can provide constructive feedback on possible plagiarism and models for improvement, as well as set a standard for peer evaluation in your school.

What is a scale or a mode?

THE BEATLES AND MODES

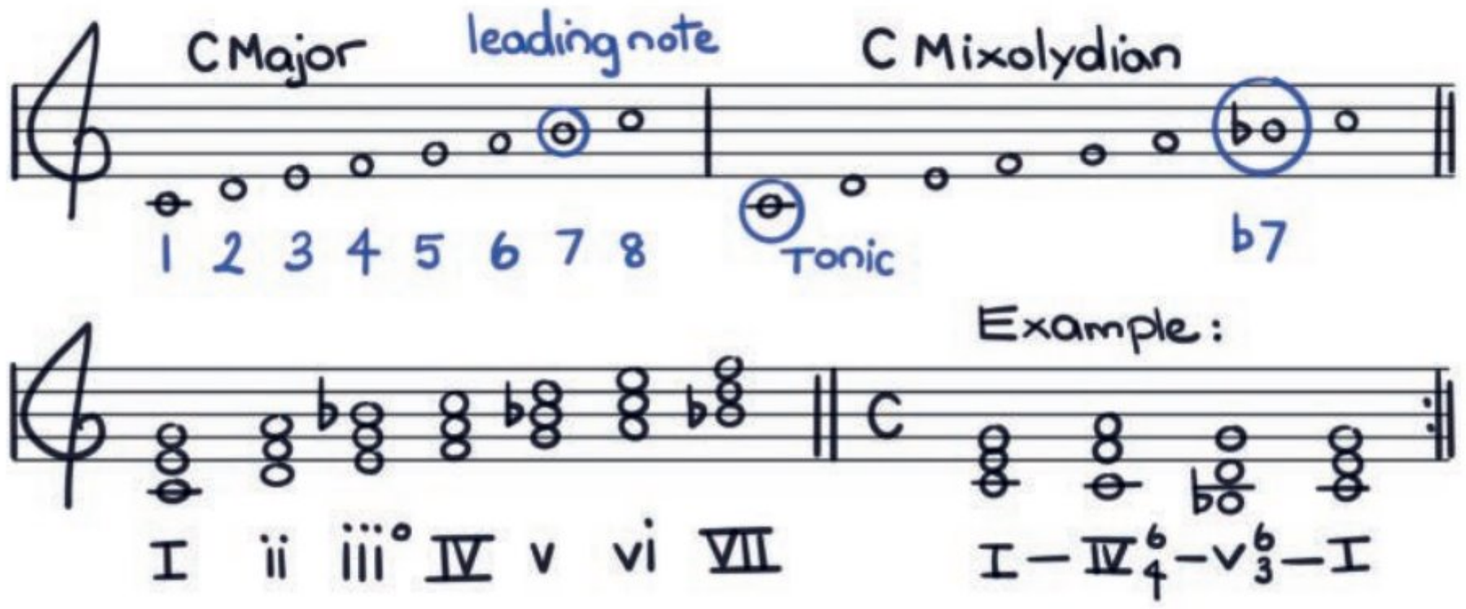
From the 1960s and even until today, the masters of melodic rock and pop are The Beatles. It is not because they did everything in an innovative way or because they were the first to use an early type of synthesiser called a Mellotron (they weren't); it is because they combined good melodies with interesting progressions. For example, the song *Strawberry Fields Forever* in Figure 4.48 used a new technological instrument the Mellotron, but also the tried-and-tested descending bass line over a diatonic progression (which here means 'in the key of'). Just like any Baroque-era work, or the Monteverdi duet earlier, The Beatles knew the power of a good bass line to structure a piece.

This piece continues to develop on a ritornello-like structure similar to the works of Vivaldi earlier. The Beatles and their producer, George Martin, knew how to create interesting structures to engage their audience. This is what *you* will have a go at, using the model pieces *Tomorrow Never Knows* and *She Said She Said* from their 1966 album *Revolver*.
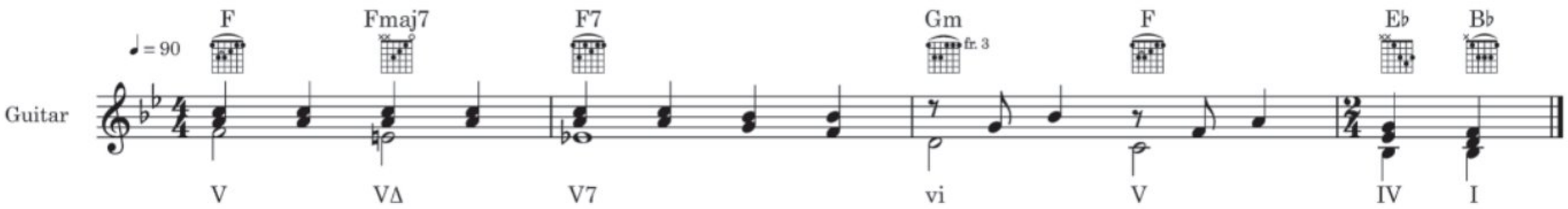


■ **Figure 4.46**

As we discovered in Chapter 3, scales are patterns of notes that ascend and descend by certain steps. A major scale moves by T-T-S-T-T-T-S (whole or half-step) and a natural minor scale moves by T-S-T-T-S-T-T (whole or half-step). However, there are several musical modes inside each of these scales. For example, if we take the C major scale of C D E F G A B C and repeat it but with a B♭ at the end, the final half-step or *leading note* has changed, giving a very open-ended sound that is called **Mixolydian**. For each of the works outlined in Figures 4.47 and 4.48, look for the flattened 7th chord, or ♭7th note of the scale, to identify the Mixolydian mode. With this we will write our own Beatle-esque song using only two or three chords.



■ **Figure 4.47** Mixolydian mode in C with its new chord formula



■ **Figure 4.48** Progression of descending bass line and chords from the B♭ major chord formula from *Strawberry Fields Forever*

ACTIVITY: Melodies from scales and modes

ATL

- Critical thinking skills: Analysing complex concepts and projects into their constituent parts and synthesising them to create new understanding

'Tomorrow Never Knows'

1 What can we identify? Listen to the track for the following points. In your portfolio, build on each point by adding notation or timing from the track itself as evidence.

- **a Drone or pedal on a single note C over an acoustic drum break**
- **b A Mixolydian mode melody (major scale with a flattened 7th degree B♭)**
- **c Chords that move from C to B♭ to C, or I-♭VII-I.**

'She Said She Said'

2 What can we identify? Listen to the track for the following points. In your portfolio, build on each point by adding notation or timing from the track itself as evidence.

- **a Opening guitar riff that uses the scale of B♭ (chord tones)**
- **b Chords that follow the major scale of I-♭VII-IV hinting at Mixolydian mode again**
- **c A melody in 3rds (meaning the voices sing 3 notes apart)**

Your turn

3 With an instrument, start in the key of C and play through the Mixolydian mode from Figure 4.47.

4 Improvise a series of short melodic phrases using C Mixolydian. Use only small steps or leaps.

5 Play or record a drone bass on C, or play a repeating chord progression of I-bVII-I (C-B♭-C) to fit with your improvised lines.

6 Program your own drum loops using The Beatles' patterns as models.

7 Record and notate your melodic phrases over your bass, chords and drums.

Repeat this process so that you **develop** an introduction, verse and chorus from all your material. Then share or swap ideas with a partner.
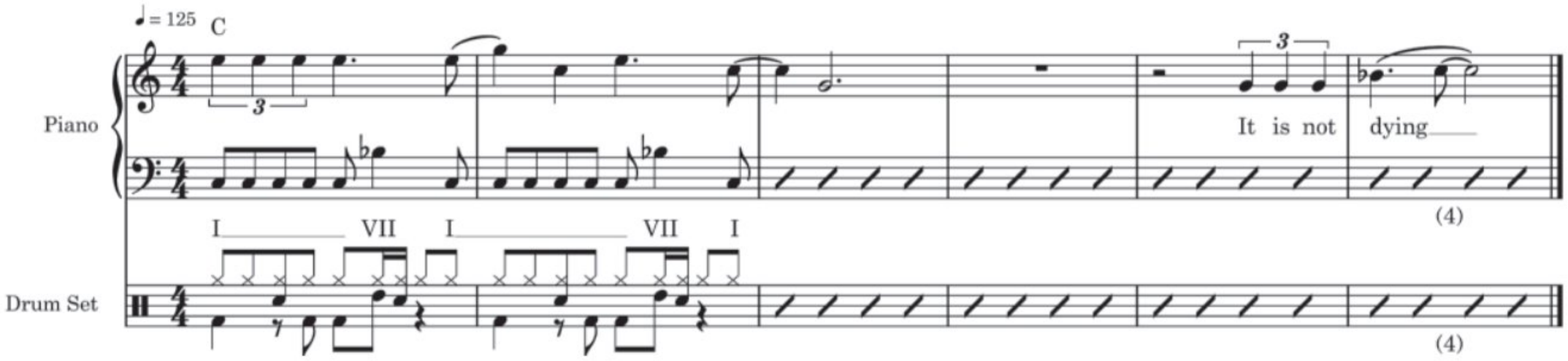


Figure 4.49 Evidence transcribed for your portfolio from 'Tomorrow Never Knows'
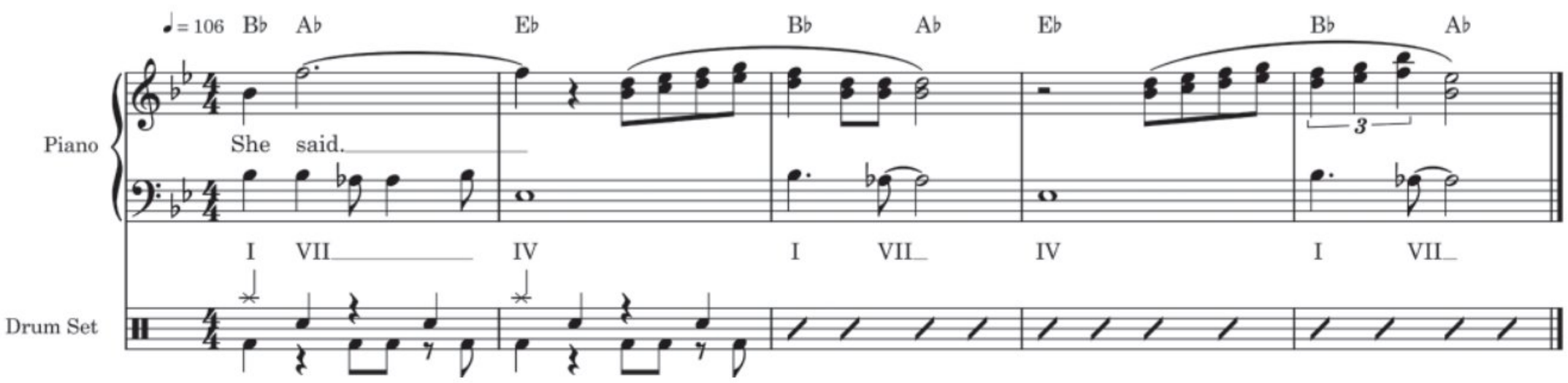


Figure 4.50 'She Said She Said' evidence for your portfolio

Portfolio presentation

Take action: What is your position?

At the beginning of this chapter, you were asked to find a common method of analysing music, a common way to deconstruct the components of certain tracks and then to research real-world scenarios that outlined issues of copyright and fairness in the music industry. Each case has presented information that compared **a** melodic, **b** rhythmic and **c** harmonic material. Now go back through your portfolio and gather your collections of evidence.

Rolling Stone magazine published a list of 12 landmark music copyright cases that you can give your position on: **www.rollingstone.com/politics/politics-lists/songs-on-trial-12-landmark-music-copyright-cases-166396/the-beach-boys-vs-chuck-berry-1963-65098**

Follow the models of investigation throughout this chapter and present your own YouTube or TEDx style script, giving your opinion on a particular case.

1. Present the two works like a court would. You can find example case information here: **https://blogs.law.gwu.edu/mcir/cases**
2. Gather evidence and collect it into melodic, rhythmic, harmonic and structural sub-sections. This will mean you need to analyse each part using the **IDEA** acronym. This is where software like **guitar-pro.com** or **hooktheory.com** are very useful.
3. Deliver a verdict based on your evidence and showcase it to your class with a creative use of multimedia.

Music exploration: More modes

When you think about modes, it is best to place a character or quality of sound to them. Jazz musicians will know the minor modes such as **Dorian** by their scale formula 1 2 b3 4 5 6 b7 8 or **Aeolian** by its scale formula 1 2 b3 4 5 b6 b7 8. There is only one note difference between these two modes, but the sound they create is worlds apart.

Experiment with these two modes on your instruments and **use** the following models for inspiration.

1. Listen to Bob Dylan's 'All Along the Watchtower' for a great example of Aeolian mode with, again, three chords Am (i)-G (♭VII)-F (IV).
2. Listen to Stevie Wonder's 'I Wish' for a good example of Dorian mode with two repeating chords E♭ minor 7 (i7) and Ab7 (IV7).

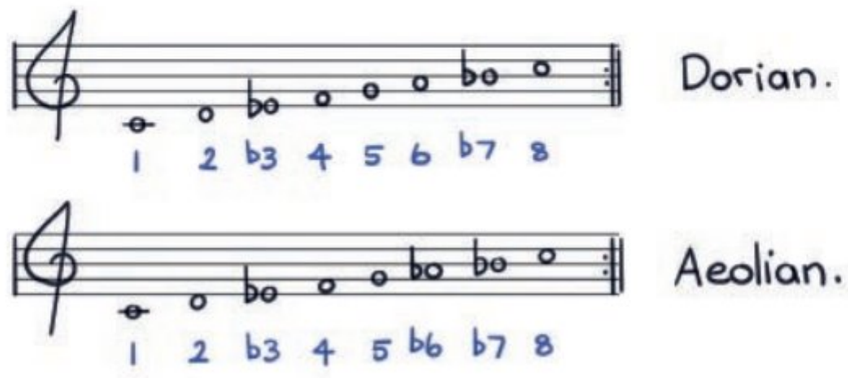


Figure 4.51 Dorian and Aeolian minor modes in C

What is rock or pop music?

Reflection

In this chapter we have **explored** multiple instances of plagiarism versus inspiration. We have **formulated** answers and opinions, backed up by evidence we ourselves have **identified** and performed. By analysing the features that make up rock today, one question has surfaced time and time again: How do we define something as original? Music is a creative endeavour and is a continuously **developing** art form. By collecting musical evidence, you can now *justify* your answers and *distinguish* between melodic, rhythmic and structural material.



■ **Figure 4.52**

SOME SUMMATIVE OPTIONS TO TRY

Use these ideas to apply and extend your learning from this chapter. These problems can be assessed using any of the strands suggested above the summative activities. The presentation and portfolio requirements are given after the description.

THIS TASK CAN BE USED TO EVALUATE YOUR LEARNING IN CRITERION A AND CRITERION D (ALL STRANDS).

SUMMATIVE 1

Rock music is meant to be played, but who defines what is 'rock'? **Using** your own listening and playing skills, your mission will be to **a** choose five rock songs from different genres, **b** perform their core riffs / patterns and **c** **demonstrate** to an audience the elements that make it 'rock'.

Presentation and portfolio

Much like a court case, you act as the defending lawyer **presenting** the evidence of a case. The evidence here can take the form of played riffs, performed chord progressions, sung melodies, audio playlists as well as notated scores. Aim to **identify** the key component(s) of each track that make it 'rock', and communicate this clearly to your audience.

THIS TASK CAN BE USED TO EVALUATE YOUR LEARNING IN CRITERION B, CRITERION C AND CRITERION D (ALL STRANDS).

SUMMATIVE 2

Create your own rock song from beginning to end: sketches to production to a notated/tabbed score. Aim to include samples, band parts and classical instruments as well as electronic ones building on the examples presented in this chapter to showcase your originality.

Presentation and portfolio

Use the following steps to document and **present** the final work:

1. **Decide whether you will score your project with software or a paper notebook.**
2. **The lyrics can be a collaborative project, but the melody and chords need to show several sketches and drafts of your own design.**
3. **Structure the piece clearly, showing research of studied rock songs.**
4. **Present the final result live or as a recorded single, with your process outlined in your portfolio.**

Portfolio presentation

Documenting and sharing

Keeping in line with all your performances, riff creations and musical comparisons, use the concept of *active listening* demonstrated throughout this chapter to explore the music you enjoy. Always divide your analysis tasks into sections that directly address the musical materials of **pitch** (melody, bass, harmony), *rhythm* (drums, patterns, syncopation) and *structure* (form of a piece, verse, chorus and even the element that glues the piece together). And as you listen to more works, use online resources like Hooktheory to train your ears to hear chord progressions. You may end up as a musician who can demonstrate originality, or save an artist in the court room!

Use this table to reflect on your own learning in this chapter.

Questions we asked	Answers we found	Any further questions now?
Factual: What is a bass line? What are riffs and ostinatos? What is a scale or a mode?		
Conceptual: How do we analyse music from different genres? Which musical features define a style? What role do chords play in the direction of a song? How aware is the audience of shared connections in musical styles? What is rock or pop music?		
Debatable: To what extent is imitation a good thing? Can an artist ever claim inspiration as original? Does the audience have the final say on what is good?		

Approaches to learning you used in this chapter:	Description – what new skills did you learn?	How well did you master the skills?			
		Novice	Learner	Practitioner	Expert
Communication skills					
Information literacy skills					
Media literacy skills					
Critical thinking skills					
Transfer skills					

Learner profile attribute	Reflect on the importance of being principled for your learning in this chapter.
Principled	

5 Is improvising a form of creativity in action?

Identifying the connection between **play** and a structured approach to musical **expression** is key to understanding **aesthetics**.



■ **Figure 5.1**

CONSIDER THESE QUESTIONS:

Factual: What are intervals and how are they used? What is bebop? What is subdivision? What is harmonisation?

Conceptual: Where do creative ideas come from? How does the concept of play improve our listening skills? How do other artists approach the concept of play? In what ways are the building blocks of music manipulated for improvising? In what ways do our local and global communities approach self-expression?

Debatable: Is sampling really a creative process? To what extent is improvising truly making music up on the spot?

Now **share and compare** your thoughts and ideas with your partner, or with the whole class.

IN THIS CHAPTER, WE WILL…

- **Find out** what it means to improvise in different musical styles and contexts through experimentation, active listening and play.
- **Explore** various possibilities in producing art using the connected musical elements of line, rhythm and space.
- **Take action** in identifying similar approaches around the world, with an aim to understand and appreciate the power of diversity in how we work (independently and / or cooperatively) to express new ideas.

These Approaches to Learning (ATL) skills will be useful…

- Collaboration skills
- Organisation skills
- Affective skills
- Reflection skills
- Transfer skills

Assessment opportunities in this chapter:

- Criterion A: Knowing and understanding
- Criterion B: Developing skills
- Criterion C: Thinking creatively
- Criterion D: Responding

Links to: Visual Arts; Theatre; Language and Literature

In Visual Arts the concepts of *line*, *rhythm* and *space* are known as *elements of art*. These apply when studying all types of media. When connected also to Theatre, students can be guided by their teachers to absurdist and improvisatory works, including *commedia dell'arte* because of the interaction between play, expression and testing the perception of 'beauty and taste' (aesthetics). Finally, Language and Literature can be included for poetic styled units where a connection to *line*, *rhythm* and *space* can be made within prose and music, utilising works from William Shakespeare to Emily Dickinson, Bob Dylan and traditional Japanese works.

We will reflect on this learner profile attribute…

- Risk takers: We approach uncertainty with forethought and determination; we work independently and cooperatively to explore new ideas and innovative strategies. We are resourceful and resilient in the face of challenges and change.

Prior knowledge

This chapter works on the premise of including all levels of learners. You will find it useful to know:

- how to play and identify scales, chords, bass lines and ostinatos
- how to play, notate and identify groups of rhythms aurally, including chords
- how to work collaboratively to express musical ideas with body percussion, voice, instruments and various forms of technology
- what working within an ensemble means for balance and intonation, but also communication and expression
- ways of describing music using pitch, duration, texture, structure, tone-colour, dynamics and expressive techniques to document the fingerprints of a style
- how to approach rehearsing, experimenting and presenting musical ideas from research and analytical listening.

Examples, links and referenced materials will guide you further.

KEY WORDS

scales and modes	intervals	syncopation
chord progressions	arpeggio	sampling
bass lines	diatonic	contrafact
phrasing	chromatic	harmony
	chord extension	triplets

CIRCLE OF VIEWPOINTS

Line, *rhythm* and *space*. These are the three key words that we will be investigating through the lens of *play*, or *experimentation*. You can use your own instrument, devices and senses to engage with each track in this chapter. Organise your classroom into a circle and have everyone write down a definition of the words *line*, *rhythm* and *space* onto a card. Use the three points below to structure your answers:

1. **I am thinking of the word *line*, *rhythm* or *space* from the point of view of… (your answer)**
2. **I think that the word *line*, *rhythm* or *space* describes… (your answer)**
3. **A question I have from this viewpoint is… (add your question here)**

Now go around the **circle** sharing your answers and writing down new ones that you had not considered.

You should find that words like *line* have a direction attached to them, often implying movement. *Rhythm* can take on many states of slow to fast, but it also describes specific patterns and repetition. *Space* may refer to gaps between sections and how smaller parts combine to form a larger picture, much like how small brush strokes on a canvas can form a larger portrait when you take a step backwards.

Do you still have any questions about the three words? Can you think of music that you listen to that has a very clear *melody line* or *rhythmic pattern* or *uses space* (rests)? These are the most common applications of these words within the subject of music, yet we will discover more as we go through the chapter.

Hint

Whenever a new work is introduced, apply this questioning to the piece: Can I find the line, rhythm or use of space in the track?

ACTIVITY: Basic patterns of sound

ATL

- Collaboration skills: Helping others to succeed

Intervals are the basic foundational patterns of melodies, and we have seen these at work in previous chapters. Through listening and **identifying** various interval relationships, you start to play with the most recognisable parts of any melody, bass line or **chord**.

Play a game called 'Noto,' where you test each other's listening skills. Pick up an instrument to play the following collection of intervals. Keep the note C as a constant and build intervals on top of it as shown. The easiest way to remember these ascending intervals is to connect recognisable tunes to each pair. To win this game of interval bingo, all you have to do is connect three in a row and be the first to yell *Noto!*

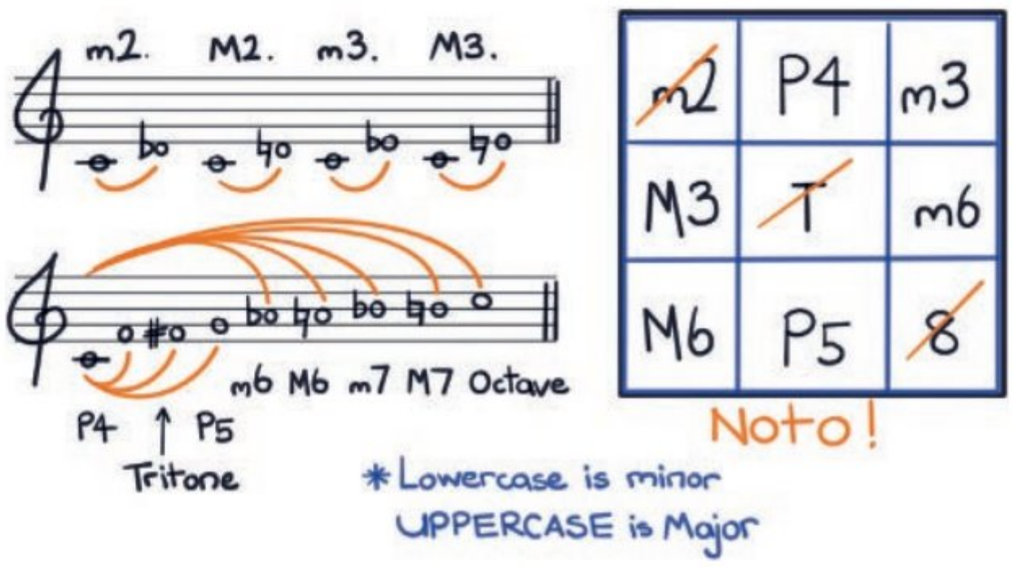


Figure 5.2 Major and minor intervals *Noto* game

Assessment opportunities

In this activity you have practised skills that are assessed using Criterion A: Knowing and understanding.

MEET THE ARTIST: 65DAYSOFSTATIC



Figure 5.3 Press shot of 'No Man's Sky'

Building a world of musical ideas that continuously evolves, through live improvisation, is no simple feat. And yet, the band 65daysofstatic did just that for the 2016 space-exploration game 'No Man's Sky'. Described as a 'mathematics rock' group, the band recorded the soundtrack for the game live, with electronically **looped** and manipulated sounds. They also collected a '… big sound-library – all the individual sounds and instruments, melodies and beats…' and used software to '… put them into the game in such a way that they remix themselves.'

You can listen to the album on Soundcloud at **https://soundcloud.com/65daysofstatic/supermoon** and, as you do, ask yourself: What lines, rhythms and spaces can you hear? Additionally, which intervals can you hear repeating as patterns throughout the tracks 'Supermoon' and 'Red Parallax' or 'Debutante'?

Use your portfolio to sketch analysis diagrams and research the patterns behind these examples. For example, you can view the **chord progression** structure of track 'Debutante' here: **www.hooktheory.com/theorytab/view/65daysofstatic/debutante---no-mans-sky-trailer**

What are intervals and how are they used?

THE PATTERNS OF SOUND

'To develop musical lines' could be the answer to the question above! Intervals are only two notes with either a small or larger gap between them. Yet it is their sound quality, major or minor, that gives us a sense of the direction the music will be taking us. If intervals are combined into a longer line of notes called a *melody*, we have the basis for an ear-worm or catchy hook. Musicians spend a lot of time experimenting and playing through intervals, **scales** and **arpeggios** in order to be able to play the sounds that they hear in their heads. There is a musician who made playing the interval of an octave, combined with a melody, his signature feature.

Wes Montgomery's (1923–1968) track 'Four on Six', has an incredible bass line that glues the work together by using intervals to outline the chord patterns. Within each measure, the bass ascends an octave (8 notes) by using pairs of perfect 5ths. Below you will see the 8 measures labelled with their intervals, showing that everything is connected.
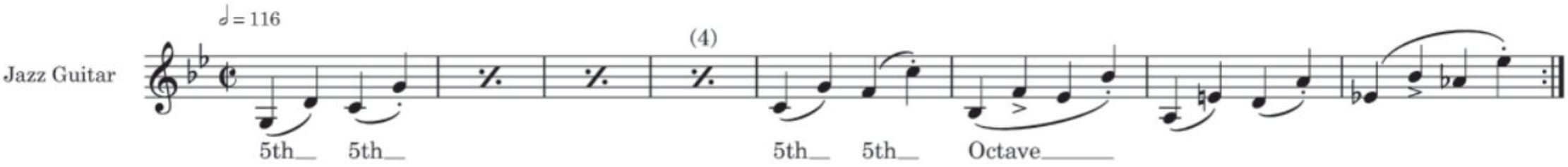


■ **Figure 5.4**

SEE–THINK–WONDER

Take some time to write Figure 5.5 into your portfolio. Then with a friend, discuss your answers to the following prompts:

1. **What do you see that shows a line or pattern?**
2. **What do you think of the other layers in the track?**
3. **What does it make you wonder about line, rhythm and space in jazz?**



■ **Figure 5.5** Bass or guitar line from 'Four on Six' in pairs of perfect 5ths

Portfolio presentation
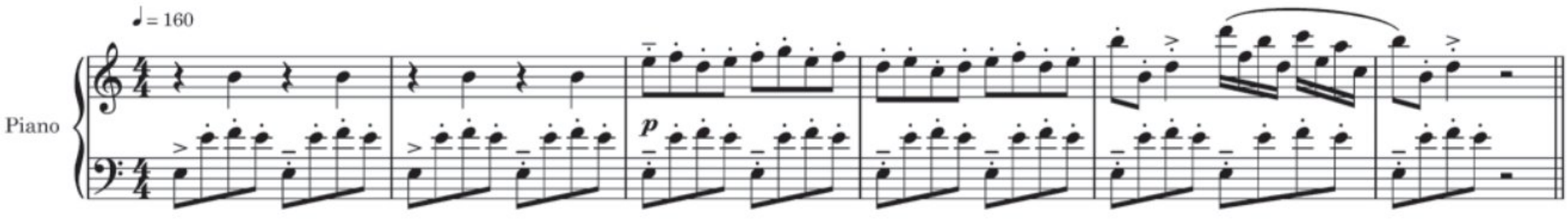
Prokofiev patterns

Using our inquiry lens of *aesthetic*, which deals with the characteristics of what we can identify and understand in art, our goal will be to explore Sergei Prokofiev's (1891–1953) 'Piano Prelude, Op. 12, No. 7' for the following features:

1. A melodic line that descends in intervals of thirds
2. Rhythmic patterns that push the work forwards.

With a partner, watch **https://youtu.be/ptxoJ9KS7Ow** for a scored performance of this work. Take screenshots and label them in your portfolio with descriptions of what you can see and hear. This is how you create your own improvisation vocabulary.

What other patterns can you identify in the right (treble clef) or left (bass clef) in this example?



■ **Figure 5.6** Prokofiev's 'Harp Prelude' mm31–36 with octaves in the bass and Phrygian mode

ACTIVITY: Ligeti ostinatos

ATL

- Organisation skills: Using appropriate strategies for organising complex information

György Ligeti's *Musica Ricercata* is a set of eleven pieces for piano composed from 1951 to 1953. We will listen to 'No. VII Cantabile, molto legato' as it is centred around a rhythmic grouping of 7 notes, played over and over until they blur into one moving shape. The idea of this work is simple: have a repeating **ostinato** in the bass and overlay it with a smooth, melodic line on top. There is a slight twist; Ligeti introduces a modal-sounding melody using the **Dorian mode**. Your task will be to notate the left-hand ostinato pattern into music software in 7/8 or 4/4:

1 **As you listen to Ligeti's 'No. VII', *draw* each melodic phrase into your portfolio using squiggles and shapes. Try to keep the note 'C' in the centre, like Figure 5.7.**



Figure 5.7 Ligeti line-drawing

2 **You will hear that intervals are soon added. Use a different colour to draw the shape of any new lines. What patterns do you notice?**

3 **Using the lines you have drawn, create your own shapes to notate over the left-hand ostinato. As it repeats, experiment with intervals, long notes and short notes around 'C.'**

You have just used line-drawings to improvise your own melodic parts!

Assessment opportunities

In this activity you have practised skills that are assessed using Criterion A: Knowing and understanding and Criterion B: Developing skills.

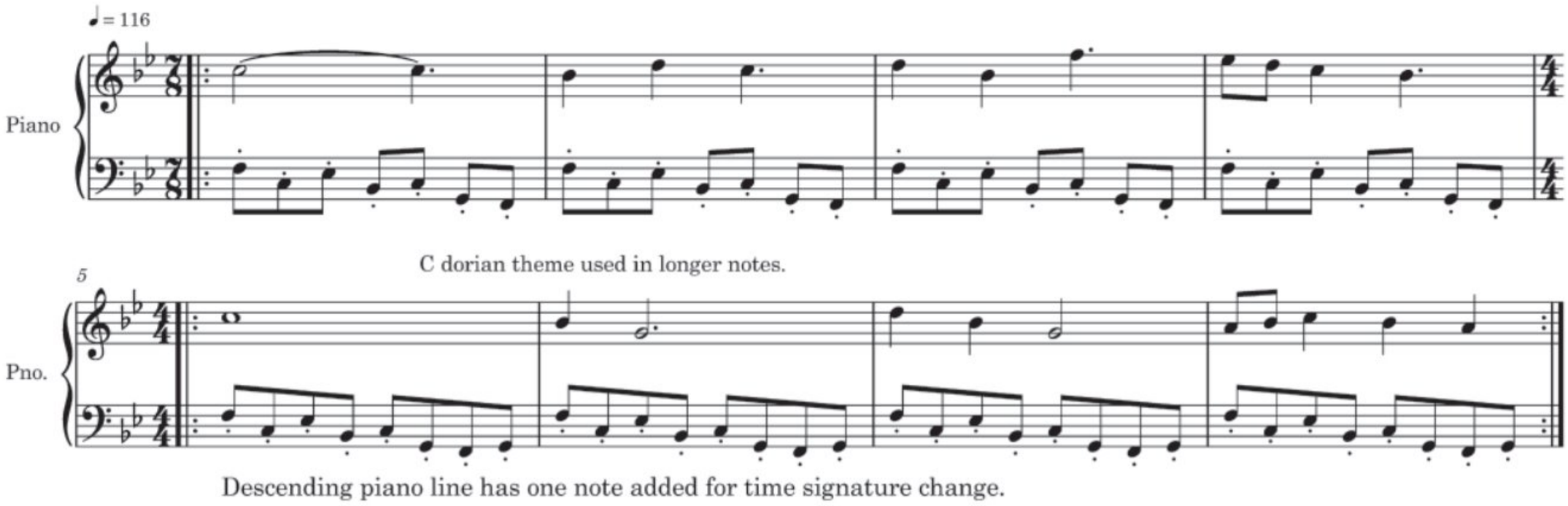


Figure 5.8 Ligeti line-drawing; measures 1–4 are the original, with measures 5–8 an example composition

EXTENSION

Performance: *Mikrokosmos* Book 1

Béla Bartók (1881–1945) wrote a series of individual piano pieces between 1926 and 1939. The beauty of this collection is that they are a complete music vocabulary in themselves. If you ever wanted to know how to play scales, **modes**, folk-music, ascending or descending patterns, **syncopations** and **canons**, now you can. The aim of learning from these books, on any instrument, is that you build a *vocabulary* for improvising. Start this week with Book 1 *No. 11 Parallel Motion*. It is a short work in the **Aeolian mode** where you learn to play with two hands, or split it between two people. The Aeolian modes' scale formula is 1 2 b3 4 5 b6 b7 8.

Where do creative ideas come from?

! Take action

- ! Find out what it means to improvise in different musical styles through active listening and play.
- ! Explore various possibilities in producing art using the connected musical elements of *line*, *rhythm* and *space*.
- ! Identify similar approaches around the world, with an aim to understand the power of diversity in how we work.
- ! Create a presentation and 'creativity resource' for your school community that examines methods of 'overcoming blocks and remaining creative'. Use live performances such as a riff-off with musicians, rappers, dancers or writers to demonstrate how our brains respond to diversely imaginative ideas. You could structure your presentation around the terms *line*, *rhythm* and *space*.



■ **Figure 5.9** John Mayer's *Continuum* album

WHAT MAKES YOU SAY THAT?

The following pieces use melodic, rhythmic and spatial elements that you can learn from. Divide yourselves into two groups, with one group discussing 'Slow Dancing in a Burning Room' and the other group 'Belief' from John Mayer's 2006 album *Continuum*. You will compare notes with each other after you have engaged with the questions that follow:

Hint

Try pairing intervals together. Intervals such as 3rds and 6ths go well together, as do octaves and 5ths.

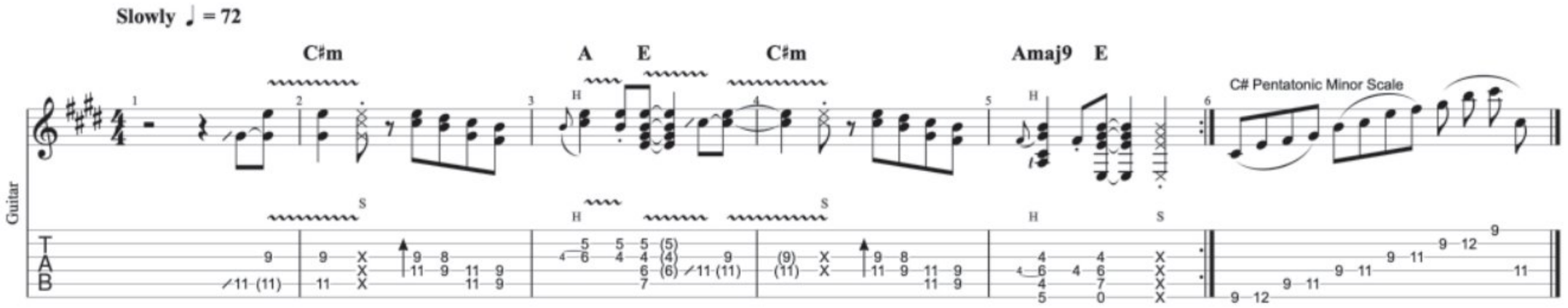
1 What's going on? What is happening in the music that shows line, rhythm or space?

2 What do you hear that makes you say that? What will you use as evidence?

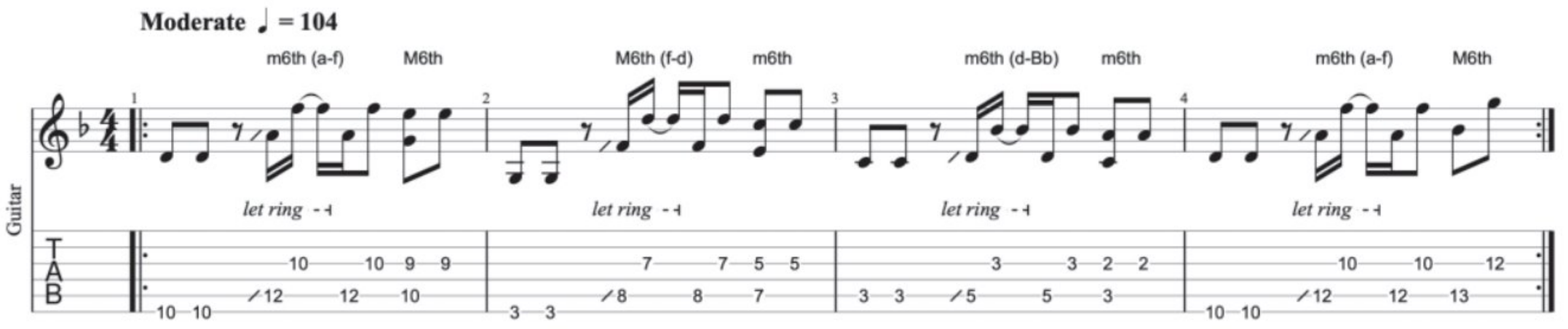
John Mayer is the type of musician who can take a phrase, play it, sing it, or improvise an incredible solo over the top.

Most of the solo work in these examples revolves around something called the *pentatonic minor* scale. Each note in this 5-note scale fits over the chord progression, giving Mayer the opportunity to bend, slide, hit, hammer and shake it. Try playing the scale in Figure 5.10.

Mayer's interval-driven track 'Belief' in Figure 5.11 includes him playing patterns of major and minor 6th intervals moving downwards in **pitch**. He **creates** a clear line over a solid rhythmic foundation.



■ **Figure 5.10** Minor pentatonic scale introduction over 3 chords made with Guitar Pro 7



■ **Figure 5.11** Descending 6th intervals with bass notes on first two 8th notes (quavers) made with Guitar Pro 7



■ **Figure 5.12** blocks, in 3D, can show line, rhythm and space.



■ **Figure 5.13** Spire mobile recording app by iZotope

GENERATING IDEAS

ACTIVITY: Generating musical ideas

ATL

■ Organisation skills: Setting goals that are challenging and realistic

Where do creative ideas come from? Improvising is a form of creativity where, through active listening, you experiment with different ideas. If you sound 'like' someone else, does that mean you have plagiarised? No. It simply means you are experimenting with the same musical building blocks. What you need is a process of play.

1 **Playing with blocks: Bringing different-coloured blocks or Cuisenaire rods into your creative process works wonders. Not only can you graph out a melodic line or rhythmic pattern, but you can purposefully add in space as well.**
 - **a** **Arrange Cuisenaire rods into a series of 3 or 4-note stacks.**
 - **b** **Go to your instrument or device to experiment with representing these blocks as sound.**
 - **c** **To add variation and contrast, you can place them in a 2D arrangement to loop as well.**

2 **Playing with dice: Most dice are 6-sided but you can get 7 and 12-sided dice, which work perfectly for our experiments. The result may not sound pretty, but you get to say it is yours!**
 - **a** **Attach a scale or mode to the numbers of a 7-sided dice.**
 - **b** **Roll the dice any number of times, but keep writing down the order of results. This will form your new melody.**
 - **c** **Roll the dice again in groups of three, and this will form your triads.**

3 **Playing with rules: If you have an old set of cards lying around, turn the cards over and deal the deck into quarters.**
 - **a** **First quarter is listening: make up interesting rules as you listen to new pieces. For example, select a random Spotify playlist and write down the first two things you like about track 1.**
 - **b** **Second quarter is drawing: Create a set of rules where you have to sketch, draw, diagram and mind-map music while watching a film or interview.**
 - **c** **Third quarter is playing: Play the first five notes that occur to you as an ostinato. Or, using the piece you are currently learning, take one bar and perform it as a loop.**
 - **d** **Fourth quarter is composing: Using the chord progression of any song, compose your own melody to it.**

Don't forget to document, photograph and record your experiments. A brilliant application for all devices is called Spire Studio, and it can help you combine and mix your ideas: **www.izotope.com/en/learn/8-tips-for-mixing-your-song-with-spire-studio.html**

◆ Assessment opportunities

In this activity you have practised skills that are assessed using Criterion B: Developing skills and Criterion C: Thinking creatively.

What is subdivision?



■ **Figure 5.14**

LATIN GROOVES AND SOUNDS (PART 1)

Music exploration: Latin rhythms
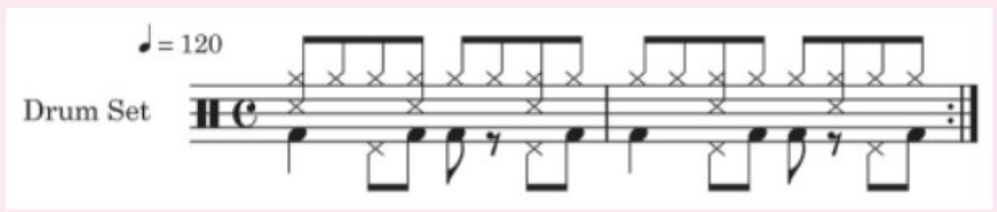
There are many regional rhythm patterns that define a culture's heritage. Many of these you may know as they have become global sensations, from **bossa nova**, *cumbia* or **samba**, to lesser-known ones like the *malambo*, *joropo* or *cueca*. Each of these rhythms has a distinct groove, or a way of **accenting** strong and weak beats across the measure. Jazz and electronic artists use the foundation of these rhythms to generate new structures or entire genres (such as reggaetón from Puerto Rico). Let us take two rhythmic patterns, the *bossa nova* and *samba*, to develop a rhythmic vocabulary that we can play with.

The *bossa nova* evolved from a style called *samba canção*. Using the drum notation in Figure 5.15, you will find a simple four-beat count. Bossa divides each **crotchet** (or quarter-note) into differently accented **quavers** (8th notes). In small groups, using body percussion, cajons, sticks or brushes, give the high-hat pattern to one person, the snare drum to another, and the kick to a third. Each person claps and performs their groove in time with the others.

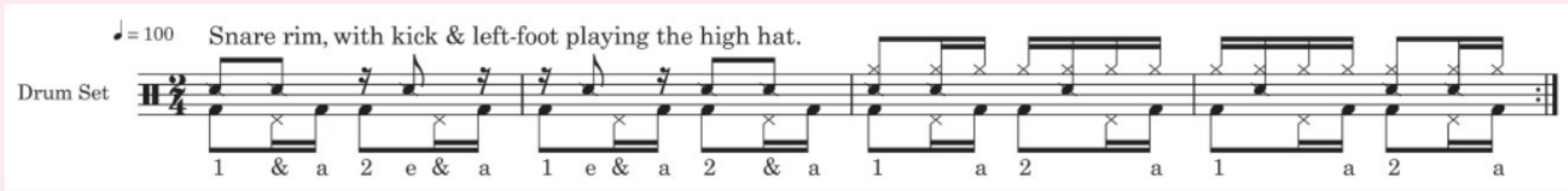
Did you get the entire groove looping? Can you try swapping parts without stopping?

The samba originated in Brazil and emerged in the 20th Century from Rio de Janeiro, São Paulo and Bahia. It has a unique feature that takes the main downbeat and counteracts it with syncopated off-beat patterns in various other layers. Samba will take the crotchet (quarter-note) beat and divide it into semi-quavers (or 16ths) with tied notes to create an ever-moving pattern. A samba rhythm for drum notation is shown in Figure 5.16, but each part is broken up for you to perform and count one piece at a time.

Again in small groups, take time to perform the rhythms above. You can use hand percussion like shakers, guiros and agogo bells. Did you get the entire groove looping? Taking a pulse of 1/2/3/4 and dividing it up into smaller groups of rhythms such as 1-e-&-a (16ths) is called **subdividing**. This is also a great way to improvise and generate interesting patterns on your own.



■ **Figure 5.15** Bossa broken down with top high hats playing constant 8th notes and snare edge playing a clave variation



■ **Figure 5.16** Samba broken down with first kick, snare rim-shot and left foot on high hats

ACTIVITY: Match them up!

ATL

- Transfer skills: Applying skills and knowledge in unfamiliar situations

Antônio Carlos Jobim (1927–1994), was a Brazilian composer, pianist and songwriter who composed many of the now standard works known as 'The Girl from Ipanema' and 'Desafinado'. After you have listened to these tracks on the playlists and performed the rhythm patterns below, we will add bass lines and harmonies to those rhythms. There is no need to think it won't work, because you simply match them up like a puzzle.

Hint

Making choices, and building on them, is most of the work when improvising.

Game 1: Choosing a rhythm

Samba involves many percussion instruments, and the grooves in Figure 5.17 come from traditionally performed parts. You can play them one at a time or as an ensemble, but choose one for this activity.

Game 2: Locking in a bass line

The role of the bass is to **lock into** (some musicians call it *sitting in the pocket of*) the drums. The secret is to make sure that your bass notes *line up* with beats in the drum / percussion pattern. Using a keyboard instrument or a bass guitar, test the example in Figure 5.18. Limiting the bass to C (tonic) and G (dominant) we lock the notes to the surdo rhythm. You can also program this into software like GarageBand.

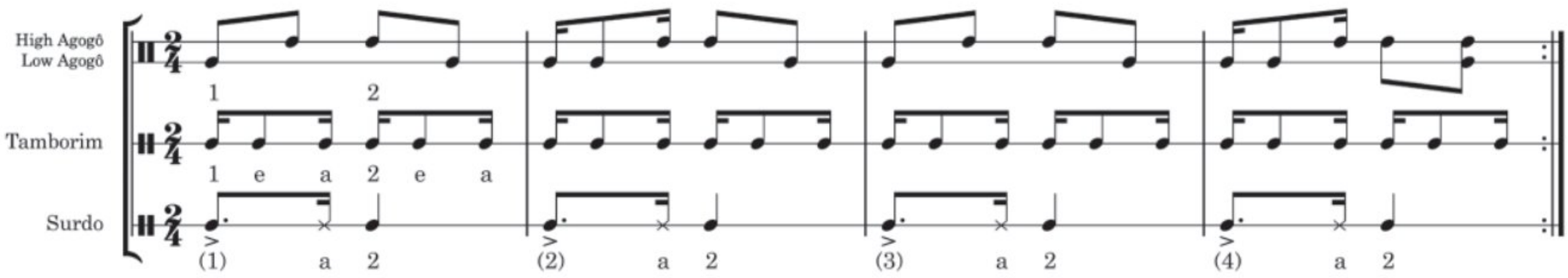


Figure 5.17 Agogo, tamborim (with muted + and open ° playing instructions) and surdo patterns

Listening strategically: Get an IDEA

The track for the entire chapter is John Coltrane's 'Equinox'. Released in 1964 by Atlantic Records, it is structured around a minor 12-bar blues with some Latin rhythms. As you listen to it, document the following in your portfolio:

Identify the sounds, or patterns, you hear.

Describe how they are being played, presented, layered.

Explain what role they play in the structure of the work.

Analyse the smaller parts (intervals, **motifs**, **sequences**) to their outward larger parts of form, modulations, phrases and **cadences**.

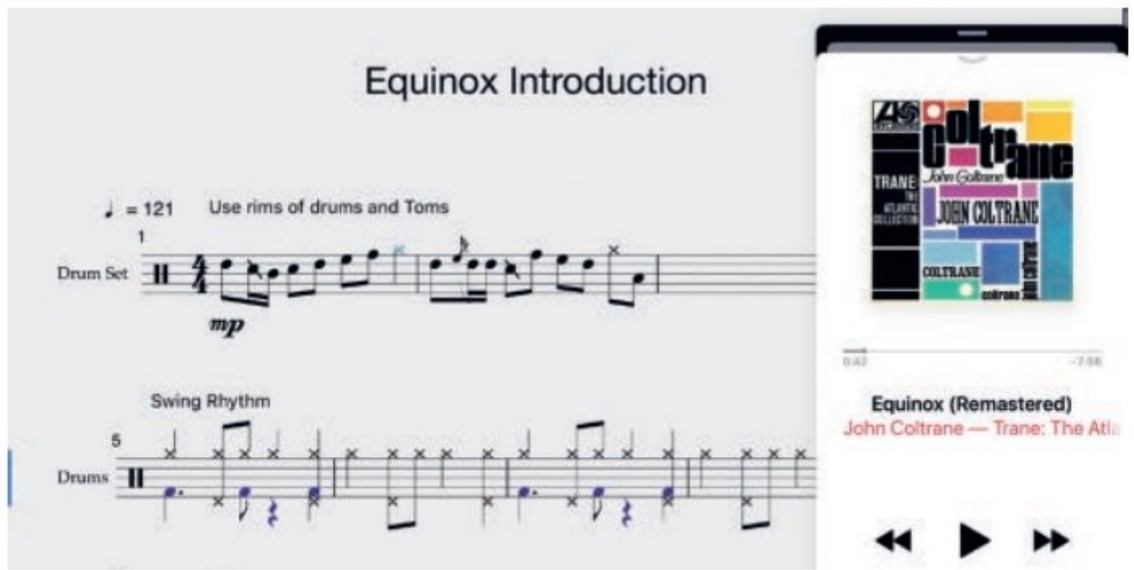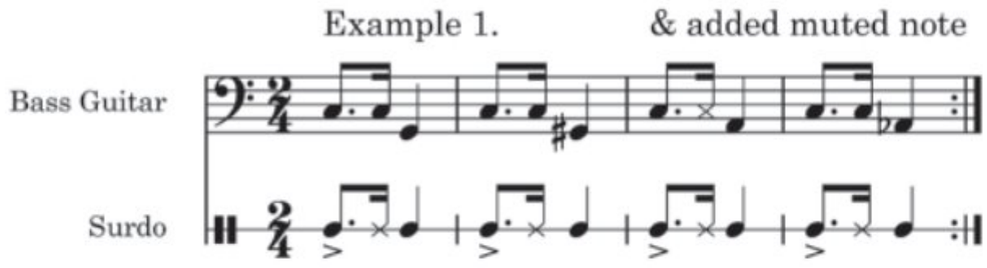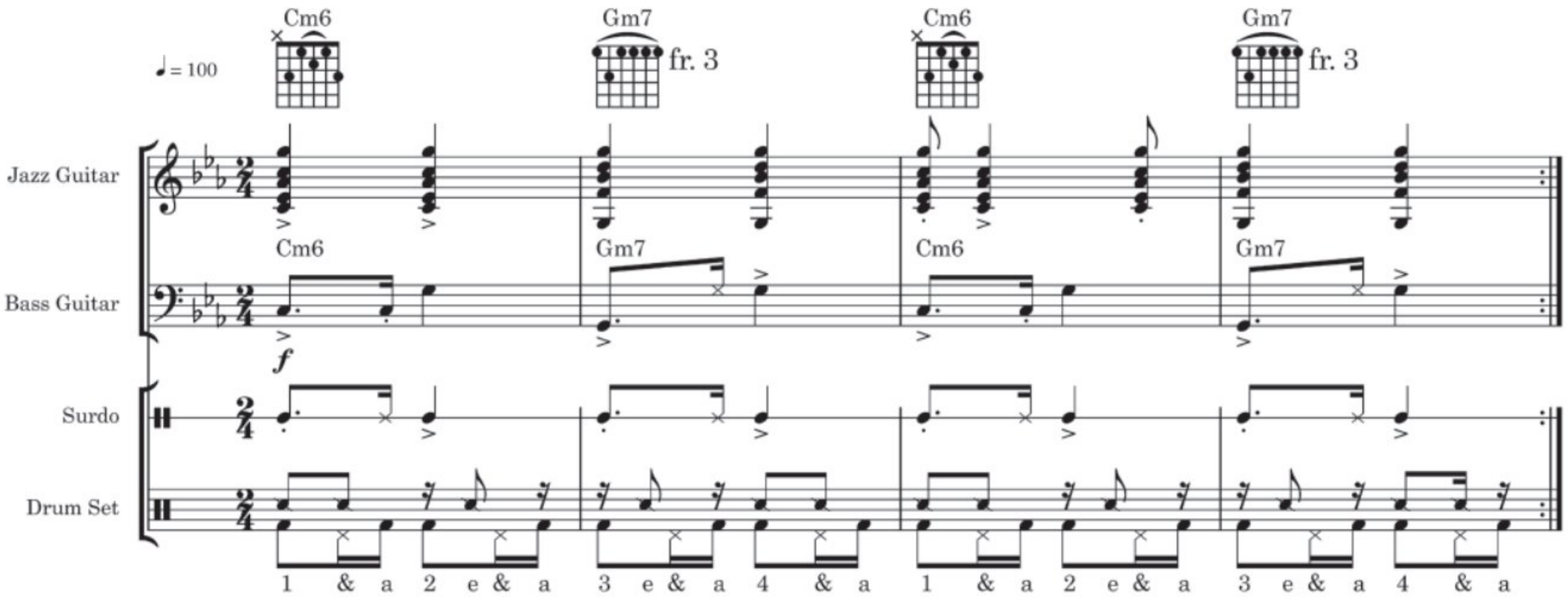


Figure 5.20 'Equinox' introduction drum rhythm transcribed using Symphony Pro for iOS

Game 3: Extend some chords

Jazz chords tend to use more than just triads built on the major scale formula. In this example, we are going to take some typical samba guitar chords and attach them to Samba rhythms. The chords we will use are notated in Figure 5.19, and they have clear **extensions**. Remember: These are just the added intervals above the bass notes of C or G.



■ **Figure 5.18** Samba bass line example



■ **Figure 5.19** Cm6 to Gmin7 as played on guitar over these patterns

You have just played a game called *match them up*. The only thing left now is to add your own melody line. Get into small groups of instruments and put on a performance that **demonstrates** what you have made. Make sure to video or record it for your portfolio.

◆ Assessment opportunities

In this activity you have practised skills that are assessed using Criterion B: Developing skills and Criterion C: Thinking creatively.

EXTENSION

Performance: *Mikrokosmos* Books 2 and 3

How did you get on performing the selection from Book 1?

Every time you complete one of these extension challenges, write a short evaluation outlining what you discovered from that particular piece.

a 'No. 37 In Lydian Mode' from Book 2 uses all the white keys from F–F in the key of C major. The bottom and top lines follow a similar rhythmic pattern in canon. Play the top line by yourself first, and then split the two parts with a partner, one in treble clef the other bass clef. Can you perform it together?

b 'No. 67 Thirds against a Single Voice' from Book 3 uses the intervals of a 3rd in A minor over a longer phrased bass line. Play the top line by yourself on a keyboard instrument. Listen to the combination of the two notes and how they repeat. Then experiment playing 3rds all over the keyboard. Lastly, add in the bass clef part with a friend.

Which of the two melodies did you find more expressive or open for experimentation?

How does the concept of play improve our listening skills?



■ **Figure 5.21**

LATIN GROOVES AND SOUNDS (PART 2)

Music exploration: More Latin rhythms

Why explore more rhythms from Latin America? Because they have repeated figures that are both syncopated and that lock into the other parts. These are the exact features you want when you improvise. We are beginning to absorb enough musical vocabulary to start making up our own lines, with both rhythm and space. But first, let's investigate a latin pattern called *son montuno* that uses the 2–3 **clave** as its rhythmic glue.
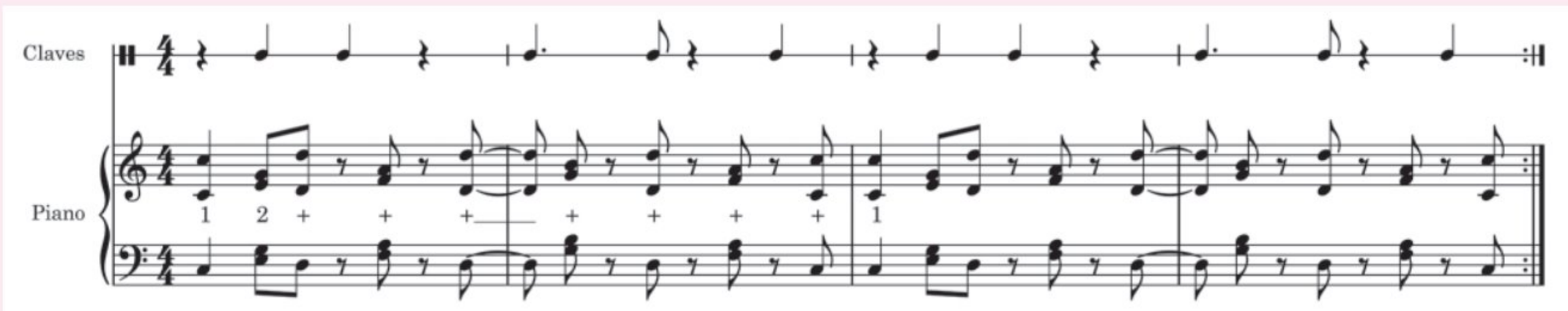
'Cocinando' by Ray Barreto was released in 1971 as the theme to the film *Our Latin Thing*. Tito Peunte and subsequently Carlos Santana's 'Oye Como Va' are also built on the same son montuno rhythm (with a bit of cha-cha). You can listen to the works on the playlist.

Every element builds on top of the previous layer with just enough space to bring in more instruments. This is how **complementary** patterns work in this style of music.

The bass line is shown in Figure 5.23 for you to perform in your classroom, or sing in **solfeggio**.

Did you notice that each pattern subdivides the main 4/4 pulse into quavers (8ths) and accents some notes that are off the beat? This the type of syncopation that makes music interesting.

Finally, to get that son montuno sound, we need to combine our knowledge of interval lines and rhythms into one smooth pattern. Using the notation in Figure 5.24, take turns playing the patterns, listening carefully to the change from octave to 3rds to octaves again.
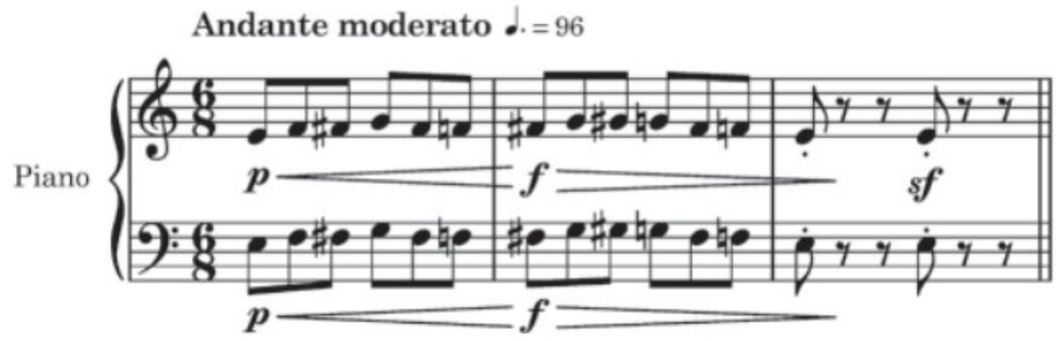


■ **Figure 5.22** 'Son Montuno Piano in C Major' with 2–3 clave

EXTENSION

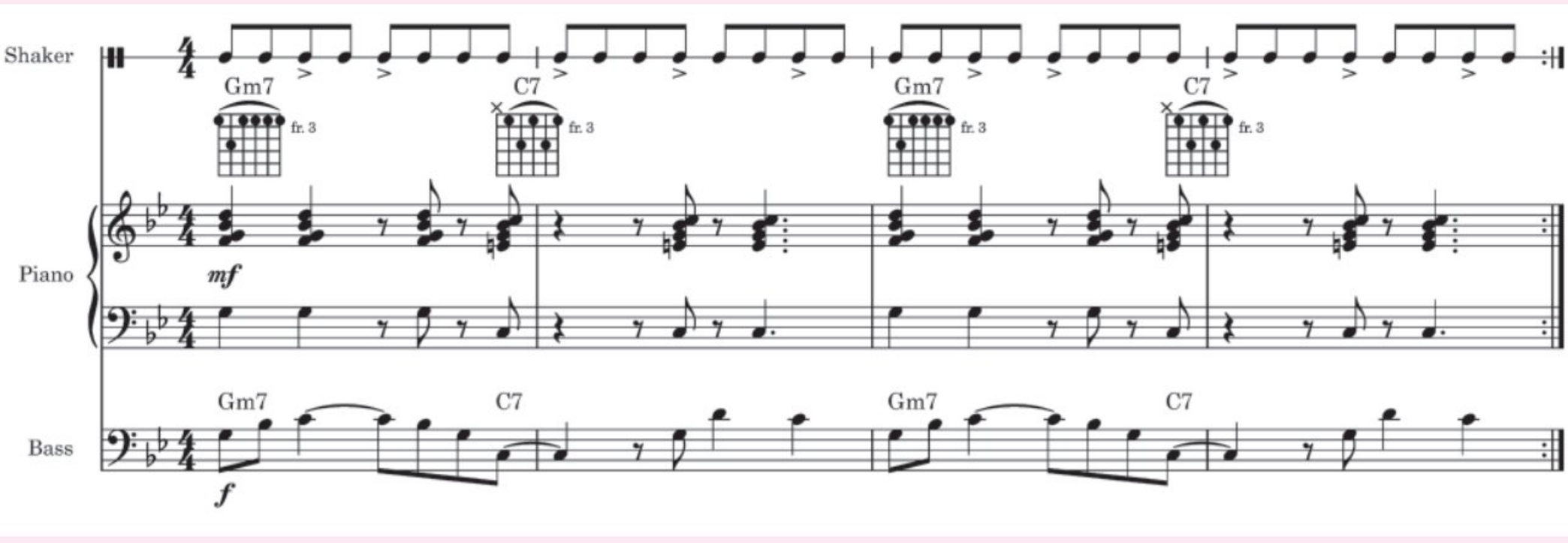
Performance: *Mikrokosmos* Book 2

'Play' does not mean just learning an instrument; you need to work with the building blocks of music in different contexts to truly get a grasp of how it works.
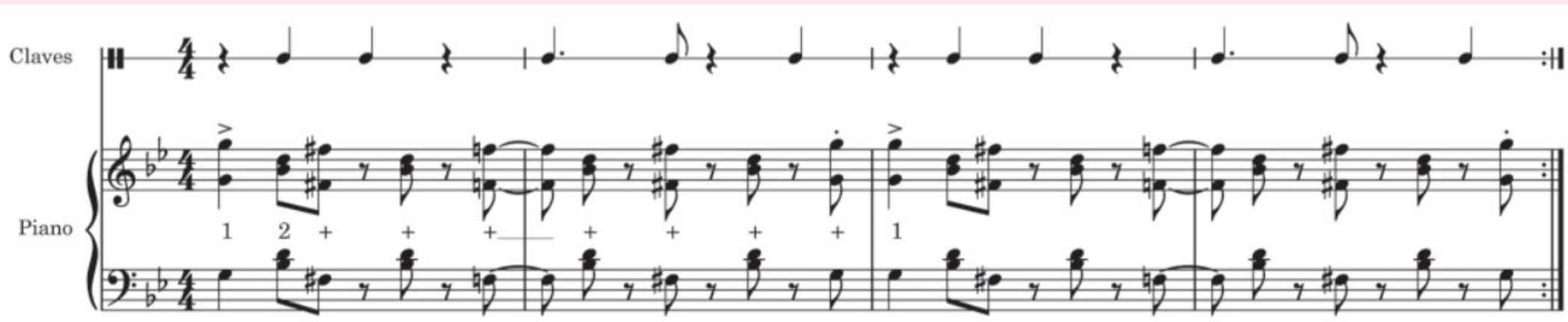
With this opportunity, play 'No. 54 Chromatics' from Book 2. Play the top line by yourself on a keyboard instrument and ask a teacher or friend to play the bottom part with you. This uses the white and black notes of a keyboard to step up and down in repeated lines.



■ **Figure 5.25** Chromatic Bartok example showing use of sharps, flats and naturals



■ **Figure 5.23** Bass line with chords set to a montuno pattern



■ **Figure 5.24** Descending son montuno line in G minor

You now have the basic elements of line, rhythm and space to begin improvising over 'Cocinando'. Just add in a G minor pentatonic scale for your solo.

ACTIVITY: Match them up again!

ATL

- Transfer skills: Transferring current knowledge to learning of new technologies

In this activity we are going to play the *match them up* game again. Below are two typical chord progressions for guitar and piano set to a clave pattern. Each progression is four measures long and is inspired by works of musicians Tito Puente and Antônio Carlos Jobim. Your job will be to complete the following steps:

1. **Play or enter the chord progressions into notation software or GarageBand. Then create an empty melody instrument on top.**
2. **Choose one note from each chord, in each measure, to play and hold for four beats on your instrument (or by singing). These are called chord tones.**
3. **Each time the four measures repeat, play a different note from the chord in the measure. In your portfolio, write down the notes you feel work best.**
4. **As a final step, add in one or two extra notes per measure that *connect* to each chord tone. Remember these are called passing notes. They are used to connect the main notes from the chords.**

You have just improvised new melodies, with knowledge, and sounded groovy while doing so. Now we get to **explore** a bit more of the genre called *jazz* – and, in particular, *bebop*.

Assessment opportunities

In this activity you have practised skills that are assessed using Criterion A: Knowing and understanding and Criterion C: Thinking creatively.
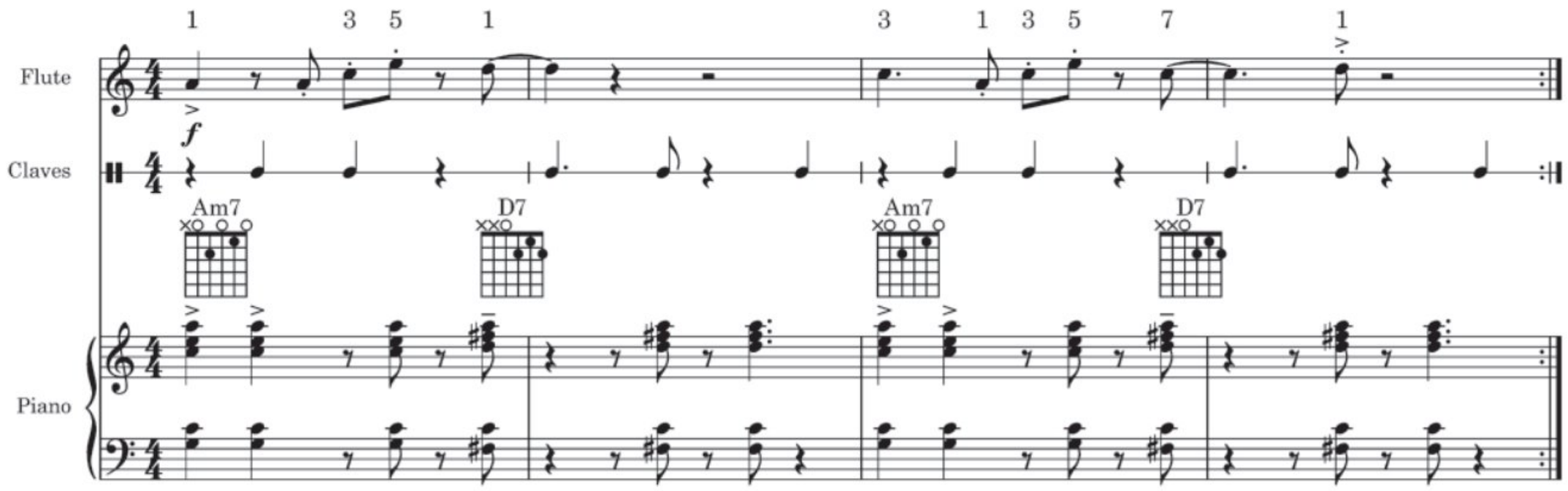


Figure 5.26 Chord progression inspired by Tito Puente with example chord-tone melodies. The numbers refer to the chord tones taken from each chord.
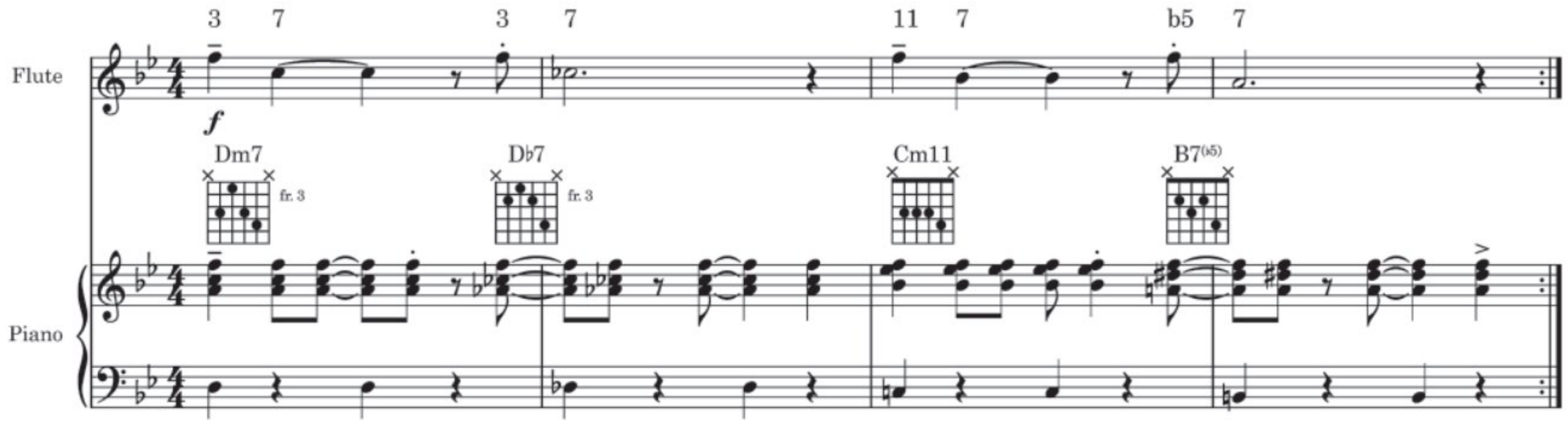


Figure 5.27 Chord progression inspired by Carlos Jobim with example chord-tone melodies. The numbers refer to the chord tones taken from each chord.

ACTIVITY: 'Equinox' melody

ATL

- Reflection skills: Demonstrating flexibility in the selection and use of learning strategies

'Equinox' is a minor blues-inspired standard released by saxophonist John Coltrane in 1964. You will have analysed it in your portfolio for the last **IDEA** activity. Here we will be analysing the melody by sketching its shape. Why? Because it uses a common formula that we have already **identified** in other pieces: *chord tones*.

1 **Listen to the track as a class with your portfolios open.**
2 **Draw four measures in your portfolio. Then with a marker, sketch the shape of the melody you can hear (for example Figure 5.28). Make sure you pay attention to the ties and changes in note direction. What do you notice about the tune?**
3 **Draw the remaining eight measures in your portfolio (so there are twelve in total), and using our sketching technique draw the shape of the rest of the melody. Make sure you identify where there is space or held notes.**

Drawing helps us focus on specific elements and to follow instrumental or vocal lines more consistently.

Assessment opportunities

In this activity you have practised skills that are assessed using Criterion A: Knowing and understanding and Criterion D: Responding.
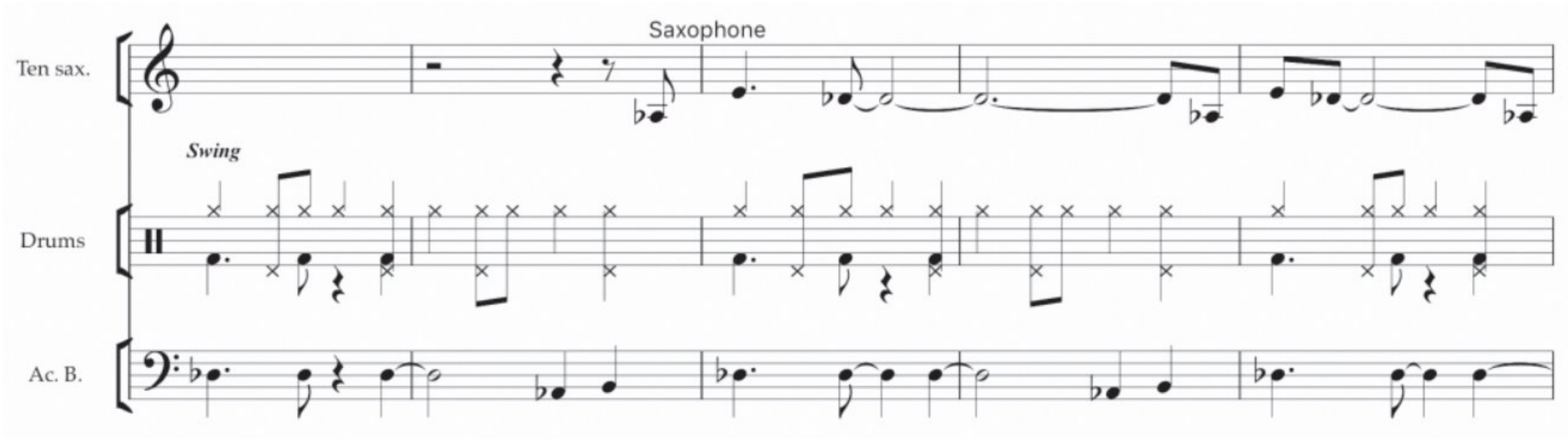


Figure 5.28 'Equinox' melody transcription in Symphony Pro for IOS, key of D♭ as in the recording

EXTENSION

Performance: *Mikrokosmos* Book 2

Triplets are a unique rhythmic grouping where three notes are squeezed into the space of two. Jazz and particularly bebop love to subdivide their melodic lines with these rhythms.

Play 'No. 55 Triplets in Lydian Mode' from Book 2 of *Mikrokosmos* to begin **developing** these skills yourself. Play the top line and ask a teacher or friend to play the bottom part with you. You should see the change from subdivisions of 2 to 3 every second measure.
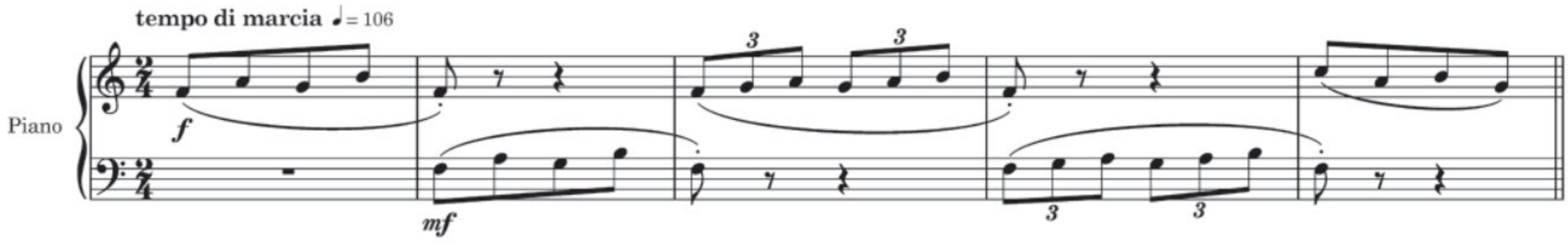


Figure 5.29 Triplet Lydian mode example from Bartok's 'Mikrokosmos No. 55'

How do other artists approach the concept of play?

GENERATE–SORT–CONNECT–ELABORATE

What does the word 'play' mean? How can we as learners, musicians and artists appreciate different performances, interpretations of songs or expressions of style? In small groups, form a discussion around the following prompts:

Generate a list in your portfolio of thoughts that come to mind when you think about the word 'play'.

Sort your ideas according to how central or tangential they are. Place central ideas near the middle of your page and more tangential ideas toward the outside.

Connect your ideas by drawing lines between those that have something in common. Write a short sentence explaining how the ideas are connected.

Elaborate on any of the ideas you have written so far by adding new ideas that expand your initial thoughts.

In the jazz style known as *bebop*, it was commonplace to visit the popular jazz standards of the early 20th Century and to *creatively borrow* them for new works. This meant taking the structure or chord progression of a song, removing the melody, speeding it up and adding in a whole new tune. Songs such as 'Satellite', off of the same album as 'Equinox', *Coltrane's Sound*, uses the chart 'How High The Moon' in this way. The mythology of bebop strongly suggests that these 'newer versions' of charts came about through endless jam sessions and listening to each other perform. What do you think? Does the practice of a contrafact fit your definition of 'play'?



Figure 5.30

STYLES THROUGH TIME

Music exploration: The Mahavishnu Orchestra

We have played through syncopated rhythms, drawn melodic shapes and composed with chord tones. Yet we need to consider what *spaces* we are leaving behind for other instruments and players. That is why Latin rhythms work so well; they are designed to fit inside each other's rests or spaces. With rock music, players are given certain roles to fulfil in the ensemble (take the riff, bass, beat), and jazz uses a framework of a tune over the A section with solos over the B section. What if there was a group that experimented with all of these components?

The Mahavishnu Orchestra was a jazz fusion band formed in 1971 by guitarist John McLaughlin. They experimented with the exact three components we have been playing with; *line, rhythm and space*. This ensemble defined experimentation with its jazz–rock approach. The 1971 album *Inner Mounting Flame* includes smooth introductions to guitar and electric violin solos on the track 'Dawn', plus a distorted work in 10/8 called 'The Dance of The Maya'. See the opening guitar riff below for 'Maya' and take note of the **chromatic** notes being used.

Listen to the two works and draw sketches in your portfolio that show the changes in structure and texture.
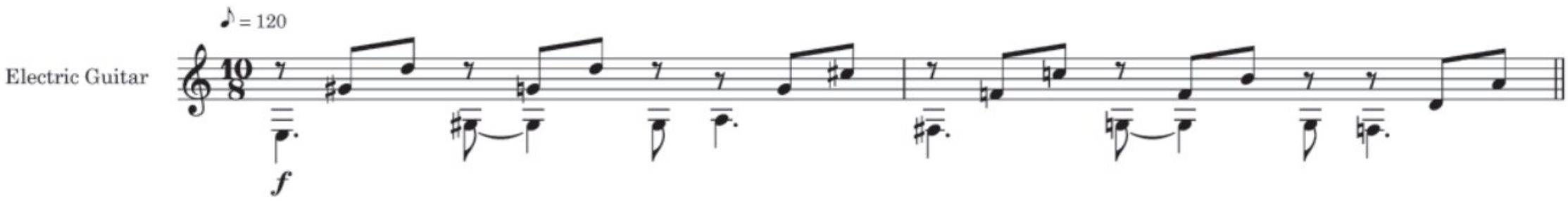


Figure 5.31 'The Dance of The Maya' opening guitar riff

ACTIVITY: 'Equinox' structure

ATL

- Collaboration skills: Working collaboratively in teams

Coltrane's music had a profound effect on improvisation and experimentation in contemporary music. From the introduction on the drums to the opening bass ostinato, you can see how the percussion and bass both *lock in* and *give space* to each other.

The chords of this piece resemble a minor 12-bar blues structure, with one chord per measure. The only *odd* chord is a flattened 6th chord (Ab7) in measure 9. Remember in Chapter 4 how 'Tank!' From *Cowboy Bebop* altered the blues structure in a similar way? To help make the connection, the progression is presented below in C minor.

Cm7	Cm7	Cm7	Cm7
i	i	i	i
Fm7	Fm7	Cm7	Cm7
iv	iv	i	i
Ab7	G7	Cm7	Cm7
bVI	V	i	i

1. **Using this chord chart and the notated version below, play and perform this 12-bar blues progression.**
2. **Using the rhythm of the bass line that resembles the 3-2 clave, play chord tones over each of the measures (as given in Figure 5.32)**
3. **Take turns both to play the chords and then give someone the chance to play the chord tones over the top. This is how you build a musical vocabulary!**

Assessment opportunities

In this activity you have practised skills that are assessed using Criterion B: Developing skills and Criterion C: Thinking creatively.
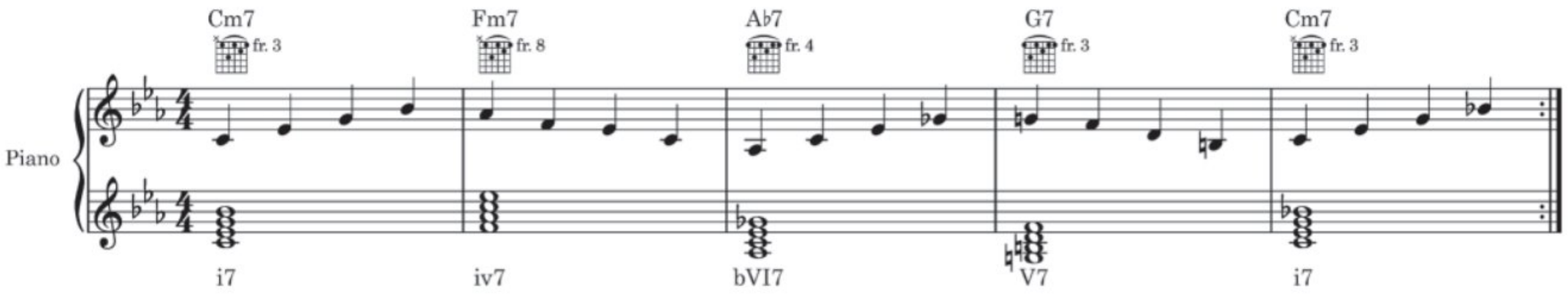


Figure 5.32 Chords from 'Equinox' notated with arpeggios in C minor.

EXTENSION

Performance: *Mikrokosmos* Book 1

In each performance opportunity so far you have engaged with modes, a canon and even triplets and duet material. This next task is from Book 1 'No. 8 Repetition' and it is an opportunity to see that, when playing a melody line, repetition is your friend. This short exercise is, in fact, a series of sequences in something we call **parallel motion** because both hands (treble and bass clef) move together.

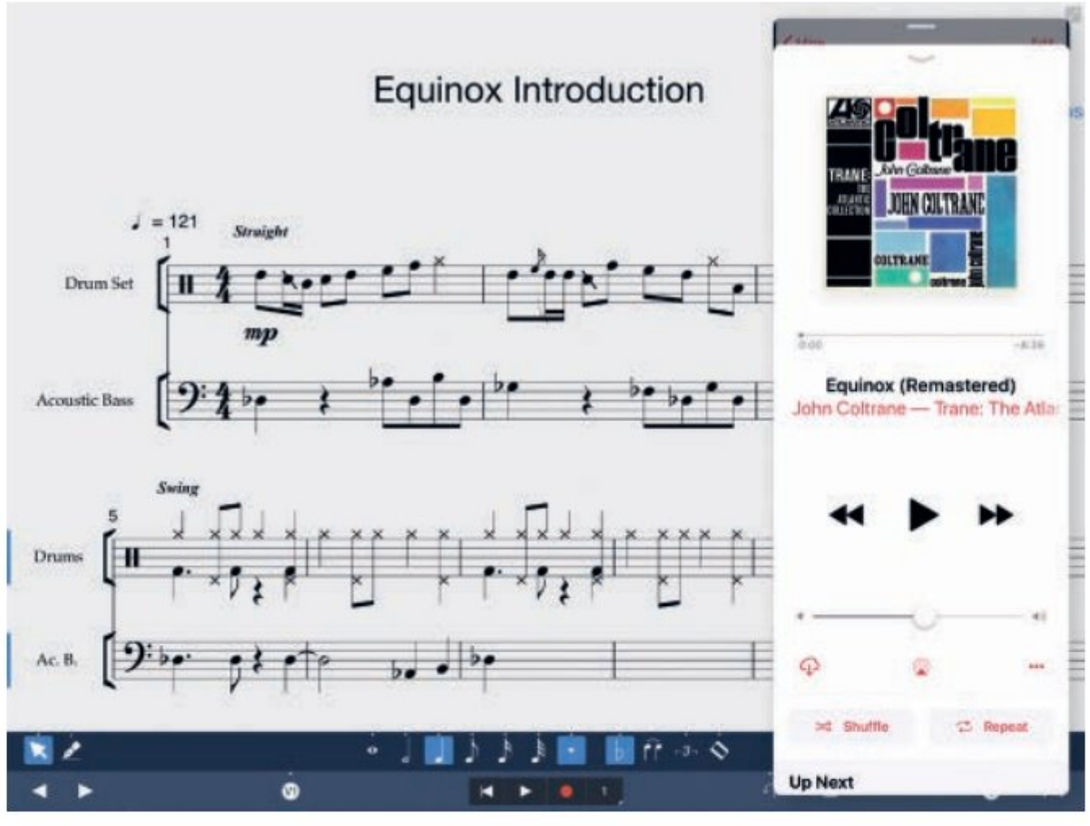


Figure 5.33 'Equinox' introduction written in the key of the recording

Is sampling really a creative process?



■ **Figure 5.34** Korg Volca Sample: www.korg.com/uk/products/dj/volca_sample/

THINK–PAIR–SHARE

As we saw in Chapter 4, samples can be anything from a chord to a vocal or chopped-up melody line. But is sampling really a creative solution?

Visit the song 'Unfinished Sympathy' by trip-hop group Massive Attack at: **www.whosampled.com/sample/2937/Massive-Attack-Unfinished-Sympathy-Mahavishnu-Orchestra-John-McLaughlin-Planetary-Citizen**. In 1991, this was *the* track to include orchestral strings, hip-hop beats and scratching set to a vocal sample from The Mahavishnu Orchestra's 'Planetary Citizen.' Listen to both tracks and write down your observations on *line*, *rhythm* and *space* using Figure 5.34. Make sure to **think** as abstractly as possible about sampling being a creative process. What must go through an artist's mind when they sample? How do they find the right sound and then incorporate it into their track?

Once you have written down a few answers, **pair** with a friend. Did they write down anything you did not consider? **Share** your ideas with each other by visiting the band's website, where there are more remixes and original samples from the track 'Unfinished Sympathy': **https://massiveattack.ie/info/unfinished-sympathy**

SAMPLING SOUNDS

ACTIVITY: Creating your own samples from performance

■ ATL

■ Affective skills: Demonstrating persistence and perseverance. Practising dealing with change

1 Using online tools

There are many online tools that you can use right now to make beats and melodic lines from short sound slices.

- **a Patatap, at www.patatap.com, works inside your browser, with your QWERTY keyboard, and incorporates beautiful images. Make a beat and ask a friend to record it with their device.**
- **b Omni, https://femurdesign.com/omni, allows you to experiment with different scales, and you can record your ideas to download them as audio files. Try working on a collaborative project with a friend, where one person provides the beat in Patatap and you provide the melodic line in Omni.**
- **c Audiotool, www.audiotool.com, is a browser-based studio that lets you drag and drop synths and drum machines. Instead of using the loops provided, upload your own and build a short track from your experiments with Patatap and Omni.**

■ **Figure 5.35** Audiotool ideas and sample uploads in www.audiotool.com
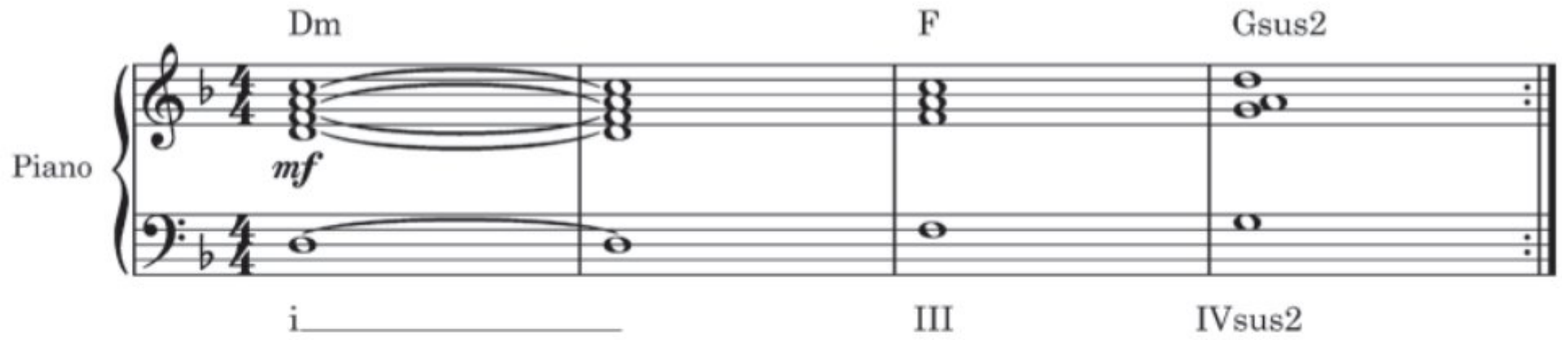


Figure 5.37 Chords i7-III-IVsus2 with keyboard overlay playing D minor

2 Using your rehearsals and practice
If you have a device or an audio recording tool, you can create a series of samples directly from your instrument.

- **a** **Set yourself up in a quiet place and hit record on your phone (use an app like iZotope's Spire).**
- **b** **Record a series of short phrases, chords or melodies.**
- **c** **If you are in an ensemble class, make short audio recordings of each section practising.**
- **d** **These can now be sent to GarageBand, Audiotool or SoundTrap for manipulation.**

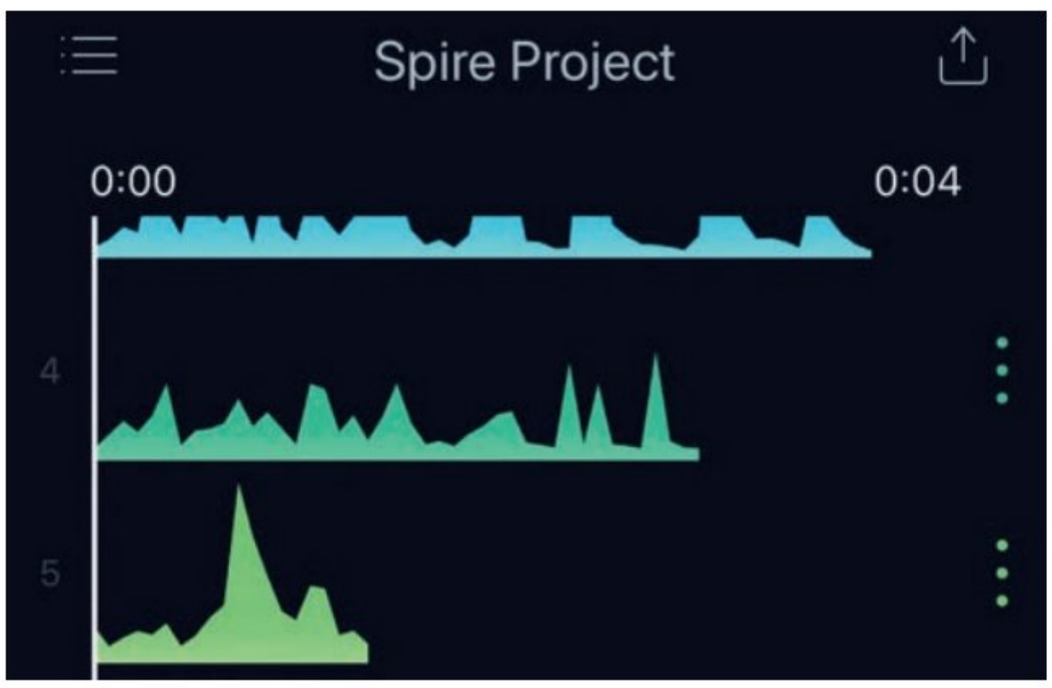


Figure 5.36 iZotope Spire audio recordings

3 Using a sampler
You can find many different samplers, but your devices have the best options. Applications like GarageBand for iOS have a sampler, the app Samplebot at https://samplebotapp.com allows you to record directly onto little coloured squares and Korg™ make a reasonably priced box called the Korg Volca Sample where you can load your own sounds. The contemporary group OK GO include samples from their track 'I Won't Let You down', with it. www.korg.com/us/products/dj/volca_sample_okgo_edition

Assessment opportunities

In this activity you have practised skills that are assessed using Criterion B: Developing skills and Criterion D: Responding.

ACTIVITY: Found sounds with chords

ATL

- Transfer skills: Applying skills and knowledge in unfamiliar situations

In this activity we will be combining the harmonic progression from Massive Attack's 'Unfinished Sympathy' with sounds that we record around us. The strings in 'Unfinished Sympathy' follow a 3-chord progression in Figure 5.37 above in D minor. Your task will be to:

1. **record sounds that you find around you every day (in the kitchen, your classroom or on the street)**
2. **use a program like GarageBand, SoundTrap or Audiotool to drag in your recorded sounds and layer them into patterns or beats**
3. **record the chord progression using software like SoundTrap, with www.hooktheory.com/theorytab/view/massive-attack/unfinished-sympathy as your structure map.**

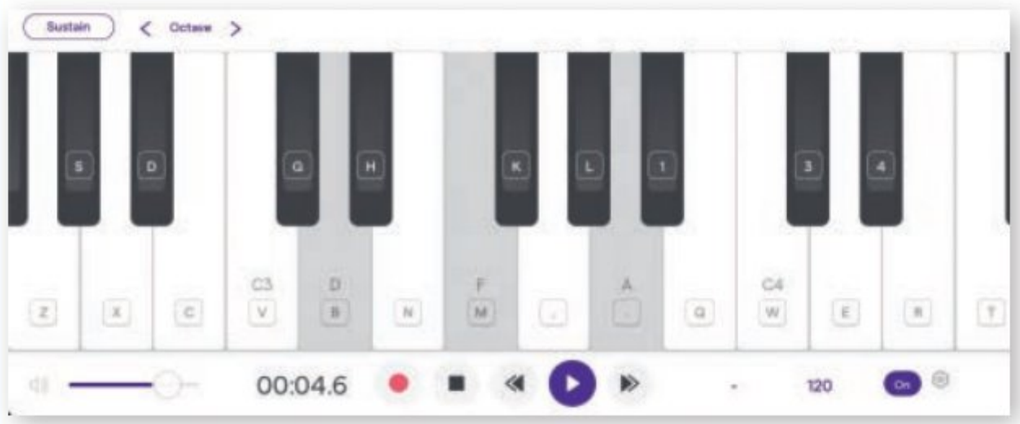


Figure 5.38 SoundTrap keyboard overlay playing D minor

Assessment opportunities

In this activity you have practised skills that are assessed using Criterion A: Knowing and understanding and Criterion C: Thinking creatively.

In what ways do our local and global communities approach self-expression?

INDIAN INSPIRATION

CREATIVE HUNT

Artists have long been incorporating the melodic and rhythmic components of Indian music into their own pieces. Jazz, rock and minimalism. Listen to electronic composer and musician Ami Dang (at **https://amidang.bandcamp.com/album/parted-plains**) and **explore** a series of improvisations for sitar and Moog synthesiser. The tracks 'Bopoluchi' and 'Make Enquiry' both **demonstrate** completely innovative re-imaginings of the Indian raga and **tala**. In Northern Hindustani music, where the sitar is commonly featured, melodic forms are called *ragas*, with a supporting drone supplied by an instrument called the *tanpura*. Additionally, the tabla drums provide the rhythmic cycle or tala. In Ami's tracks, the use of synthesisers replaces the traditional drone with evolving sounds and sequences; likewise the tala is felt by the beginning and end of each melodic line.

As a class, discuss the following questions after you have listened to Ami's tracks. Try to make notes in your portfolio **using** the **IDEA** framework.

- **What's the main purpose with these recordings?**
- **What are the different parts / layers and their roles?**
- **Which choices are especially creative in the two pieces mentioned?**
- **Who is the audience for this type of music?**

Music exploration: Ornaments

Ornaments are more than just fill-in notes they express colour and shape, and sometimes the entire character of a line. In the Baroque era, performers would often improvise ornamentation over the *basso continuo* and melody. In the Indian Classical Hindustani tradition, *Alankār*, take on a whole new character for expressing melodic lines.

- *Kan-swar* are borrowed from an adjacent note in the raga, and are a quick highlighting of the main note of the melody, like an **acciaccatura**.
- *Meend* are the smooth connection of two notes, like a slide or a bend.
- *Murki* are a light playing of two or more notes in a rapid flourish, similar to a mordent.
- *Gamak* are a special type of shaking trill that moves smoothly between two notes.

You can visit guitarist Fareed Haque on YouTube at **https://youtu.be/exsUMZssbzg** to see how Indian ornaments can translate into contemporary performance practice.

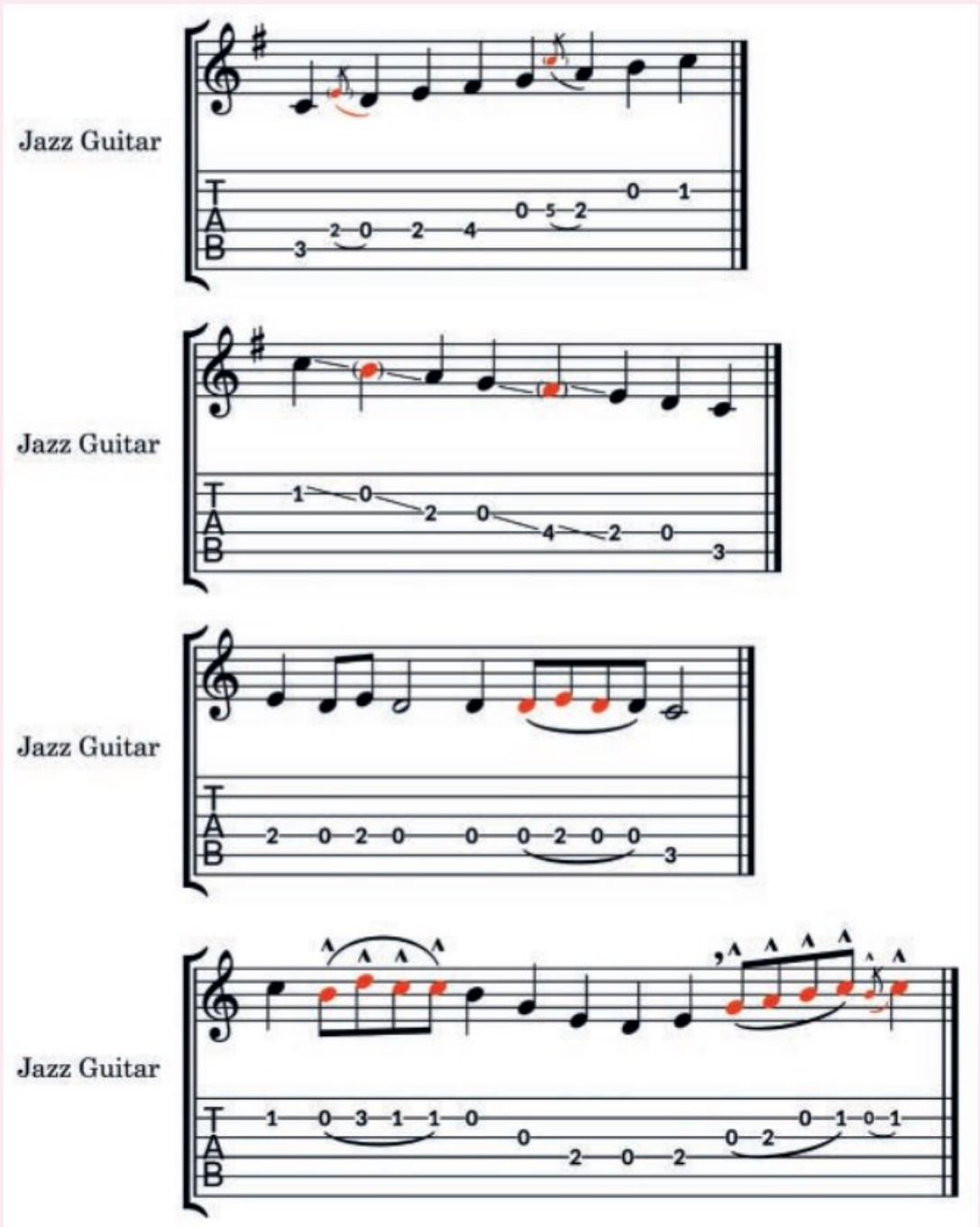


Figure 5.39 Kan-swar, meend, murki and gamak ornamentations

ACTIVITY: Ornamentation over 'Equinox'

ATL

- Reflection skills: Demonstrating flexibility in the selection and use of learning strategies

By keeping the melody in the key of C minor, we will **use** Indian ornamentations from Figure 5.39 to improvise our own over 'Equinox'. In your portfolio you should have **a** an analysis of 'Equinox', **b** the melody sketched out in lines and shapes and **c** the chord progression of 12 bars.

Using Figure 5.40 below, read and then perform your own ornamentations to the melody. You cannot make any errors because the melody is still there; you are just adding colour to the notes.

You can also research traditional Western ornamentation, such as **appoggiaturas** and acciaccaturas, turns, mordents and trills, with **www.musictheory.net**. You get to choose how you adapt to this activity and what you **present**.

Assessment opportunities

In this activity you have practised skills that are assessed using Criterion D: Responding.
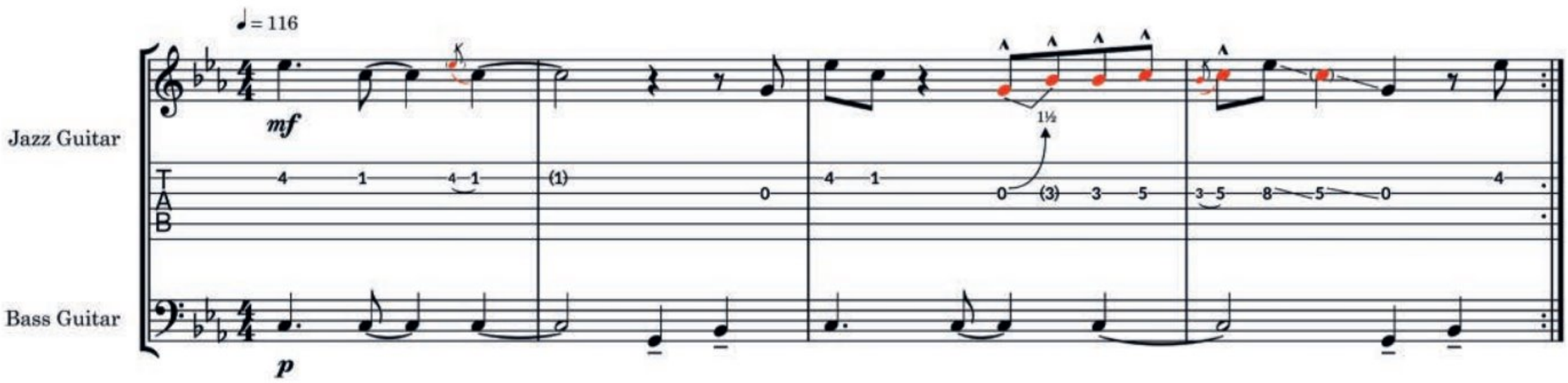


Figure 5.40 'Equinox' melody with example Alankār ornamentations labelled

EXTENSION

Performance: *Mikrokosmos* Book 1

This next work is from Book 1 'No. 32 In Dorian Mode' (here it is D-Dorian). Indian *ragas*, are not scales or modes as in the Western tradition. Learning to appreciate and play through modes such as Dorian, or ragas that are similar (such as *rag Kafi*), are good training opportunities. After you have played Bartok's exercise try to **create** your own raga-inspired piece with the ascending (arohana) and descending (avarohana) forms of rag Kafi below.
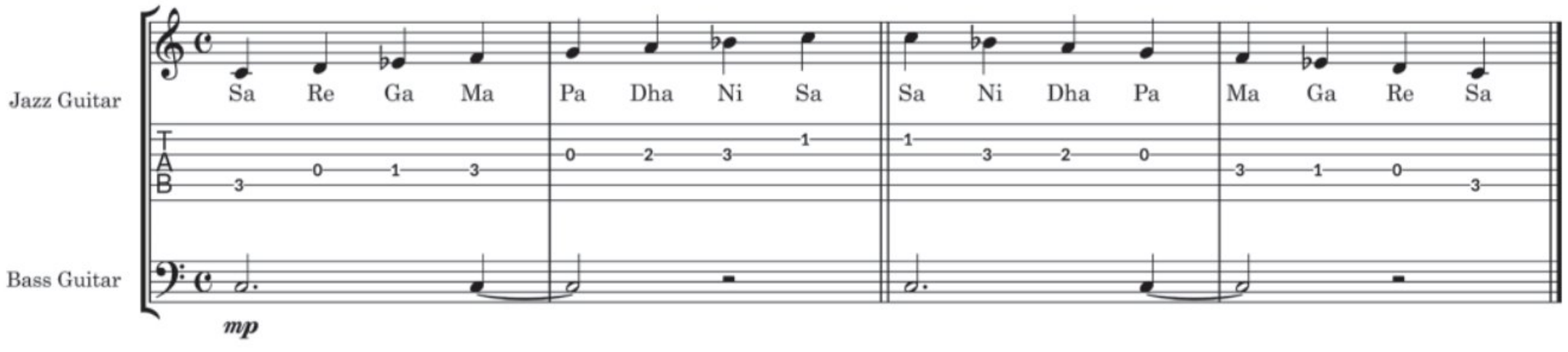


Figure 5.41 Rag Kafi uses the C Dorian mode (1 2 b3 4 5 6 b7 8)

What is bebop?

BEBOP IN ACTION

Listening strategically: Get an IDEA

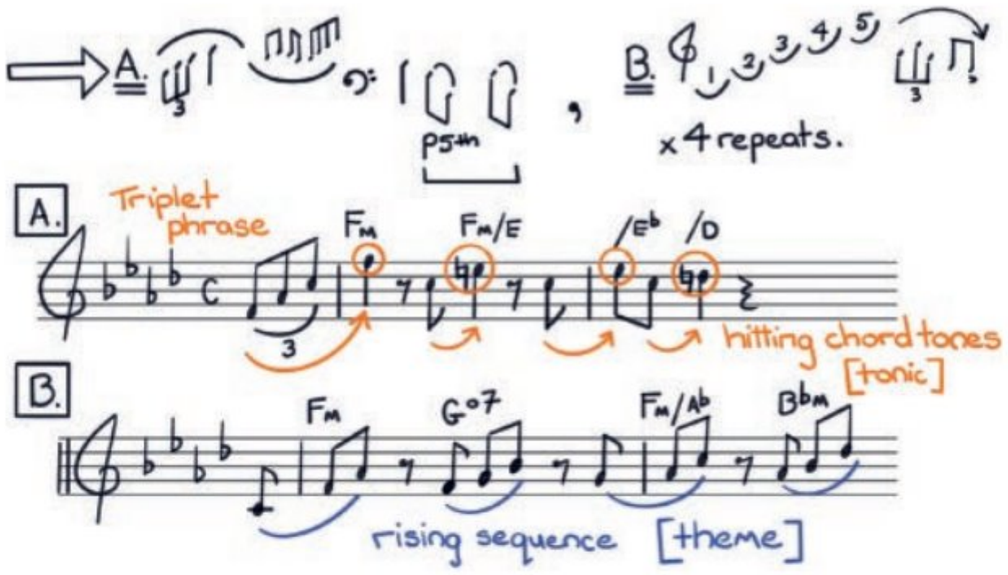
Released in 1945, the track 'Bebop' by Dizzy Gillespie (1917–1993) is an excellent analysis example. Drawing the shape of the melody line is the first step, as you listen to the track on the playlist while following the diagram below.

Identify the sounds, or patterns, you hear. Focus on the lines of melody, featured rhythms and any rests in the phrasing.

Describe how they are being played, accented, layered and repeated.

Explain what role they play in the structure of the work.

Analyse the smaller parts (intervals, motifs, sequences) to their outward larger parts of form, modulations, phrases and cadences.



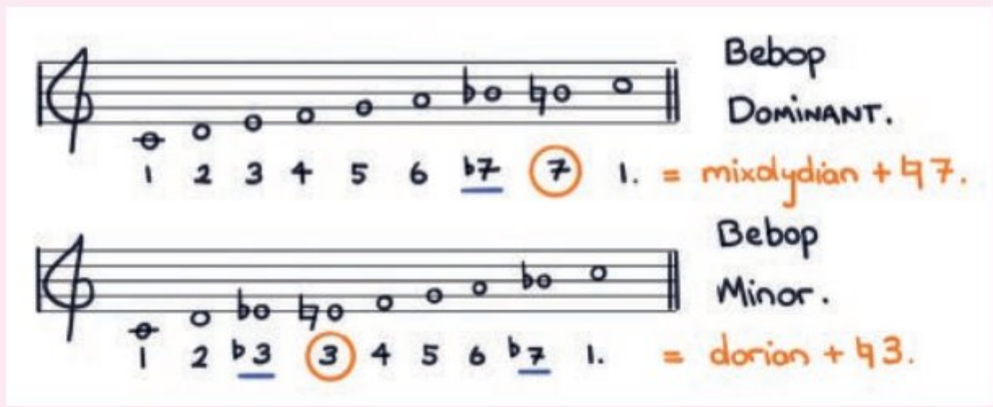
■ **Figure 5.42** Graphic notation example of 'Bebop' for analysis



■ **Figure 5.44** students notating and arranging *Groovin' High* into the correct order

Music exploration: What makes it bop?

Besides the fast tempo and triplet rhythms, 'Bebop' uses arpeggios, modes and scales. Each of the notes in a melody or solo is targeted towards the notes in the chords. Additionally, bebop scales themselves resemble some of the modes that you have been playing within Bartok's *Mikrokosmos*; namely, the Mixolydian mode resembles the dominant bebop scale, and the Dorian mode resembles the minor bebop scale. Let us have a look at the formulas so we can add them to our vocabulary.



■ **Figure 5.43** Dominant bebop scale in C major and the minor bebop scale in C minor

These bebop scales will give you a framework for adding *chromatic notes* to your improvisations.

ACTIVITY: *Groovin' High*

ATL

- Collaboration skills: Encouraging others to contribute

Written by Dizzy Gillespie in 1945, this bebop work has all the components we need to play the game *match them up*. With this version of the game, you are provided with the tune chopped up into **fragments** and out of sequence. **Using** your active-listening skills, can you put the piece back into the correct order? Write the correct order into your portfolio or perform the melodic line as an ensemble. You can ask a classmate to drum a steady quarter-note or swing pattern as accompaniment.

Hint

You may want to draw a graphic version of the melody first to match up to the notation.

Assessment opportunities

In this activity you have practised skills that are assessed using Criterion D: Responding.
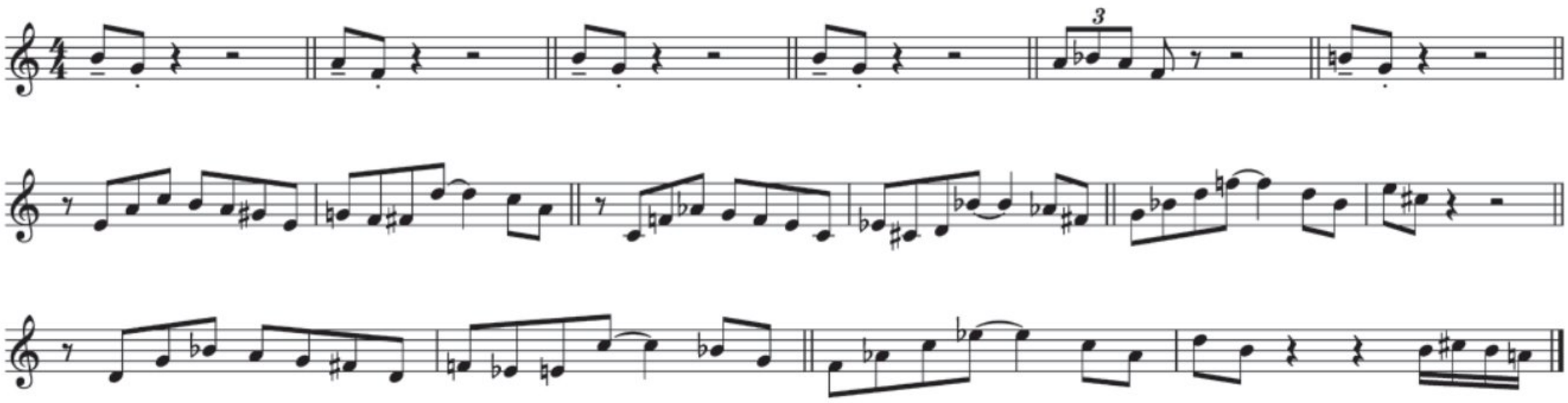


Figure 5.45 *Groovin' High* puzzle pieces separated by double barlines. Copy the measures into your portfolio in the correct order. (The first and last bars are already done.)

ACTIVITY: 'Equinox' improvisation experiments

ATL

- Transfer skills: Combining knowledge, understanding and skills to create products or solutions

This is it; arpeggios, bebop scales, triplet rhythms, and creating your own solos! This mission will combine each activity and exploration. **Using** the diagram below, prepare a series of your own lines and phrases for each chord of Coltrane's 'Equinox'. Examples have been given that you can practise. However, making up your own lines and rhythms, and then writing those down, should be your ultimate goal.

When you have rehearsed these and made up some of your own, you can teach them to a friend. Short, simple phrases, based on chord tones and scales always work best.

Assessment opportunities

In this activity you have practised skills that are assessed using Criterion B: Developing skills and Criterion C: Thinking creatively.

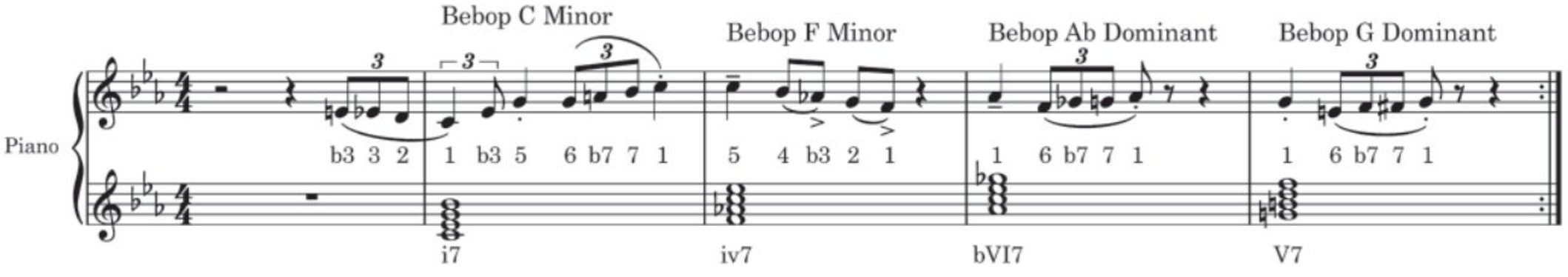
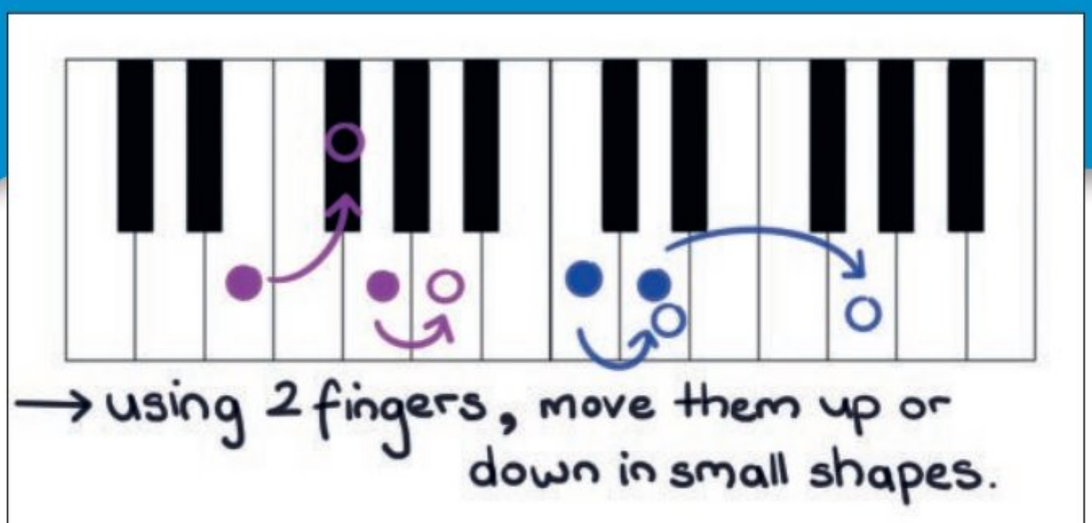


Figure 5.46 Chords from 'Equinox' with improvisation over chord tones and bebop scales

In what ways are the building blocks of music manipulated for improvising?



■ **Figure 5.48** Examples of two-finger chord playing



■ **Figure 5.47**

DEAR IMPROVISATION DIARY

Michael Price is a composer of different media types who has made his process apparent to all by releasing an album of daily improvisations. You can watch him perform a selection on YouTube or listen to the Bandcamp album here: **https://1631recordings.bandcamp.com/album/diary**. Price has also made the music available for free on his website at **www.michaelpricemusic.com**, which is excellent for this activity.

ACTIVITY: Making an improv diary

ATL

■ Reflection skills: Considering ATL skills content and development: What did I learn about today? What can I already do? What will I work on next?

Making your own diary of improvisations is a challenge, especially if you do not view yourself as creative or musical. Yet, you are! And following the example of Michael Price's diary experiments will prove it. You will **create** a short improvisation each day for a week, recording them and commenting on them, to add to your portfolio.

1. **No matter what instrument you play, find a piano or device that you can readily make sounds on. The skill is not in the playing but, as you will have heard from Price's Bandcamp album *Diary*, it is about the *space* and *line* created by each decision you make.**
2. **Have a recording device nearby (preferably your phone on a table away from the instrument, running an application such as iZotope's Spire).**
3. **Use two fingers on each hand to play block chords that sound right to you. Just let them ring and sustain. Only move on when you feel you have the next notes to play the next sound. Repeat and record.**
4. **Hold one note in the left hand as a pedal or drone. On top, following the same principal of listening first, play a slow line of notes that you feel works with the pedal. Repeat and record.**
5. **Finally, taking any of the *Mikrokosmos* examples in this chapter, break them up into fragments that you can play. They can be in one hand only, or both, but make sure you have broken it up enough that it is now a new idea. Repeat, loop and record.**

If you follow this process for an entire week, not only will your listening and playing improve, but you will start to appreciate just how important *playing* with sound is.

Each idea needs to be kept in your portfolio and labelled clearly as it could turn into an album!

◆ Assessment opportunities

In this activity you have practised skills that are assessed using Criterion B: Developing skills and Criterion C: Thinking creatively.

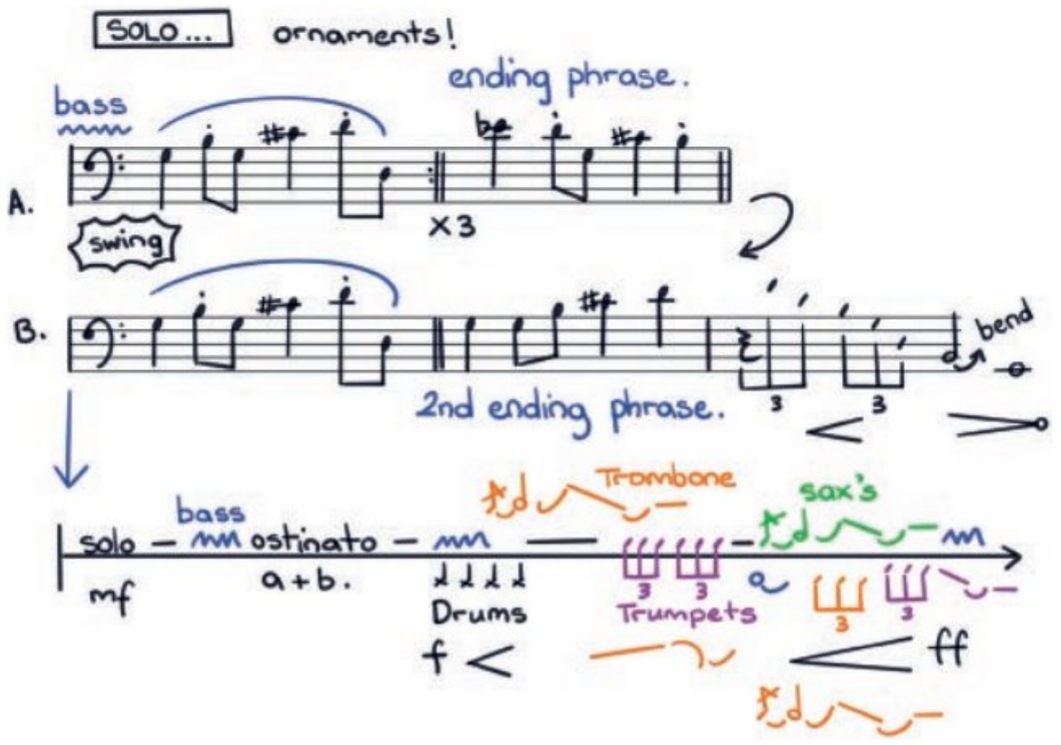
ACTIVITY: Charles Mingus' Big Band

ATL

- Transfer skills: Inquiring in different contexts to gain a different perspective

Charles Mingus (1922–1979) is one of the most important composers and band leaders of the 20th Century. Mingus advocated for a concept called **collective improvisation** in his music, which is where many artists improvise at the same time. His playing, such as in the number 'Haïtian Fight Song', clearly looks to **explore** the sound quality of each instrument (See Figure 5.49).
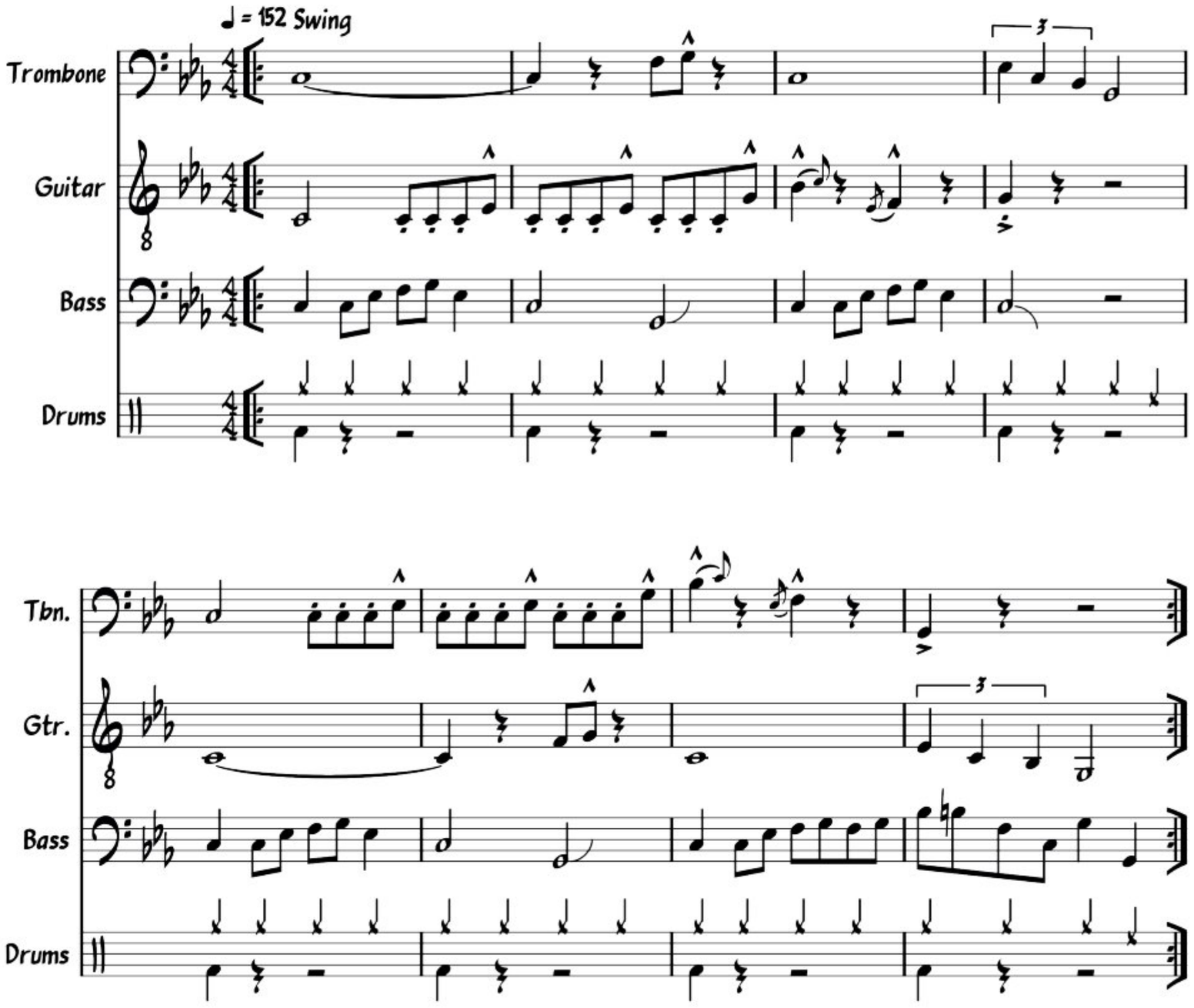
1. **Open a notation program and prepare a template like Figure 5.50. You need three instruments with 8 blank measures each. The aim will be to create a looping, 'improvised' work from your own listening.**
2. **Bass line: Starting on C, you can build a pattern that should always return to C on the first beat of each measure.**
3. **Complementary layer 1: Using the notes of the C minor bebop scale, create a 2-bar repeating pattern that uses different rhythmic notes from your bass line. For the last 4 measures, use something different.**
4. **Complementary layer 2: Copy and paste the pattern from layer 1 into layer 2, but swap the first four measures with the last four. How does it sound?**



■ **Figure 5.49** Graphic representation of 'Haïtian Fight Song'
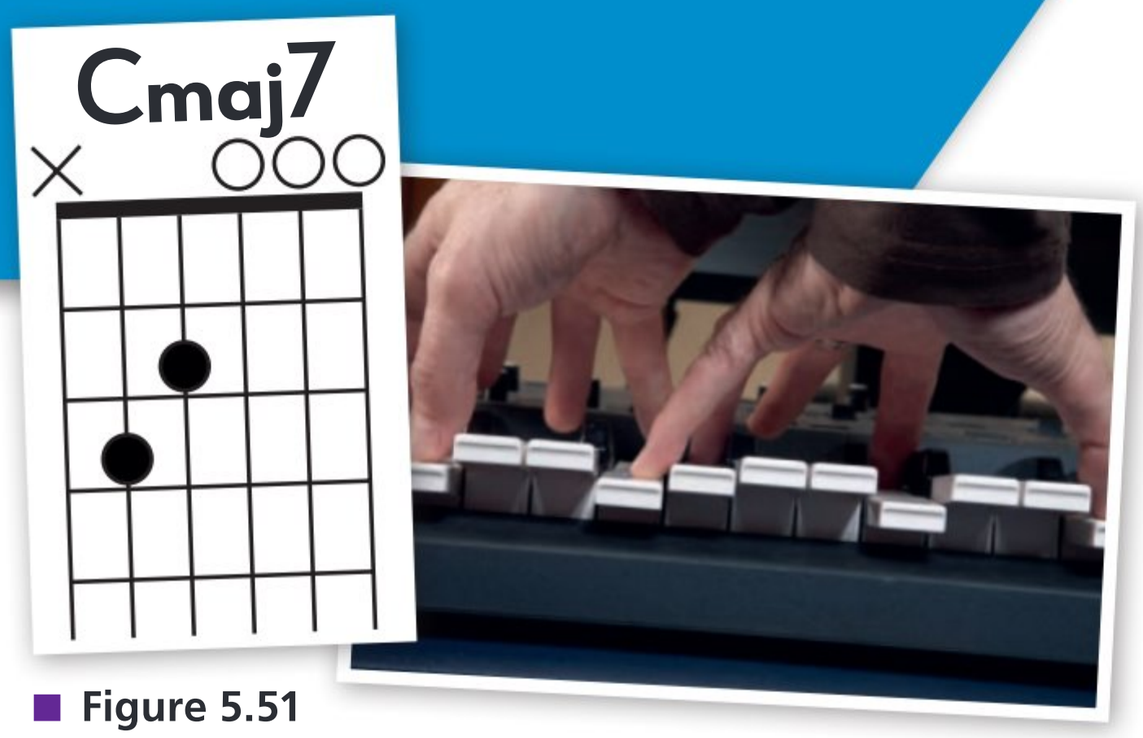
Assessment opportunities

In this activity you have practised skills that are assessed using Criterion A: Knowing and understanding and Criterion C: Thinking creatively.



■ **Figure 5.50** 'Haïtian Fight Song' layers template in MuseScore

What is harmonisation?



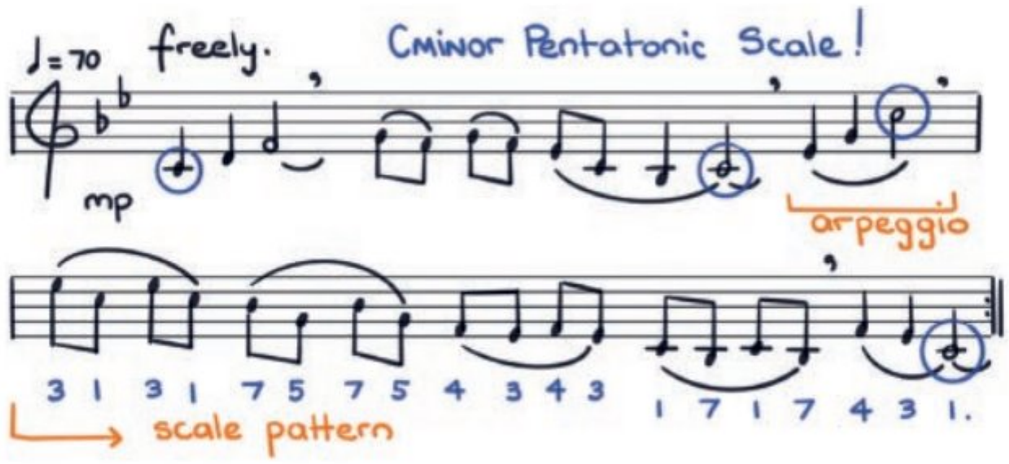
■ **Figure 5.51**

SEE–THINK–WONDER

Many events and changes in art, history or life bring about new ideas. Charles Mingus' own work spanned many different styles of jazz, from a traditional aspect to more experimental. Mingus' work 'Canon' was released on his 1973 album *Mingus Moves*. Listen to the work and, in your portfolio, write down short responses to these questions:

- **What do I hear?**
- **What do I think about the work? The canon? The fusion of styles?**
- **What does it make me wonder about creative artists?**

Finally, have a discussion with the entire class on the following point: What is the harmony of this piece? A short transcription of the canon is supplied below for you to experiment with later on.



■ **Figure 5.52** Mingus' 'Canon' transcribed

ACTIVITY: Reharmonising

ATL

- Transfer skills: Changing the context of an inquiry to gain different perspectives

Your task will be to alter through performance something that already exists. The nursery rhyme 'Incy Wincy Spider' is known by many in its lovely major key. You will find it and its basic chord progression in Figure 5.5. Play through it on your instrument and ask your teacher or a friend to accompany you.

In this activity we will learn about harmonising a tune.

Extended chords

Let us add some extended notes to the chords C, F and G. The C major becomes Csus2, the F is now Dm7 and the short G moment is a G dominant 7 (G7).

Sing the melody, but this time have a pianist or guitarist play the chords on top. Does it change the sound drastically?

Reharmonising to minor

As the jazz piece we have studied in this chapter revolved around C minor, we will now *reharmonise* this tune into the tonic minor key: C to C minor, D minor to D diminished minor, and we will add in an E♭ to the melody, just like in 'Equinox' by Coltrane (as we edit the key signature to C minor).

ACTIVITY: 'Equinox' performance

ATL

- Collaboration skills: Working collaboratively in teams. Listening actively to other perspectives and ideas

Your task here is to put on a group performance of John Coltrane's 'Equinox' by taking turns to improvise or play melodic lines over the studied work. **Using** different instruments, go back over this chapter and experiment with our examples of line, rhythm and space.

Aim to use techniques such as: pentatonic minor scales, chord tones, arpeggios and modes.

Don't forget to applaud each and every attempt!

Harmonising is a powerful tool when improvising: If you want to learn more, revisit the major and minor scale formulas in earlier chapters.

Assessment opportunities

In this activity you have practised skills that are assessed using Criterion A: Knowing and understanding and Criterion B: Developing skills.

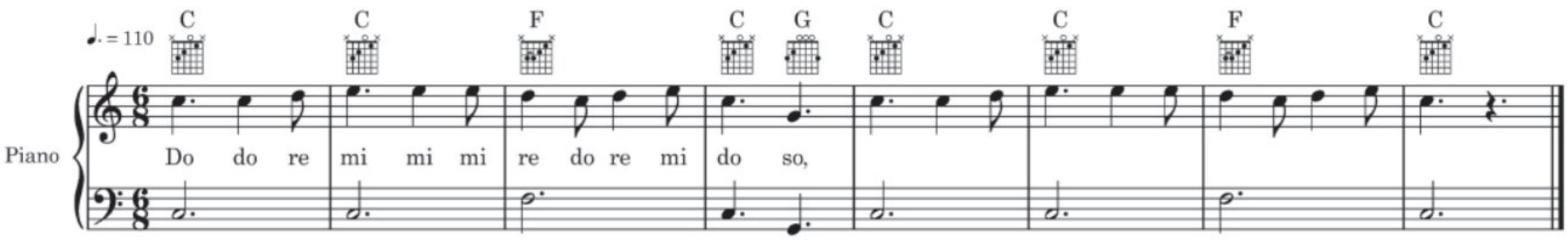


Figure 5.53 'Incy Wincy Spider' in 6/8 with I IV V harmony like the blues

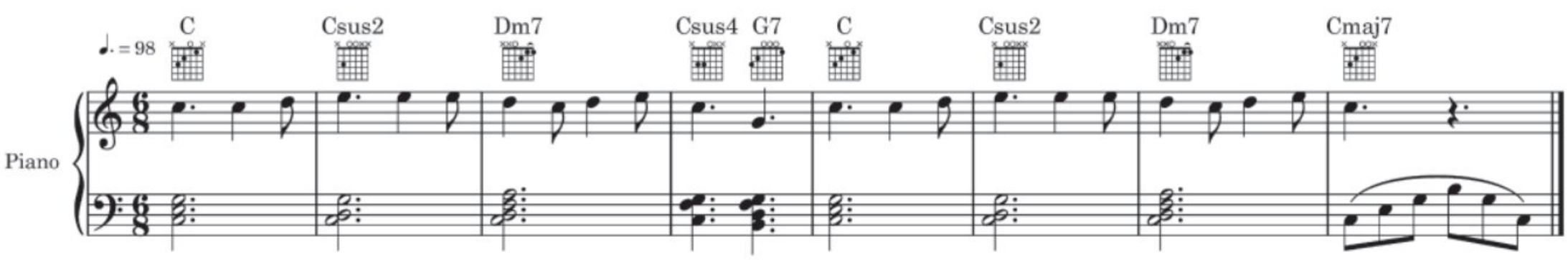


Figure 5.54 'Incy Wincy Spider' with extended harmony
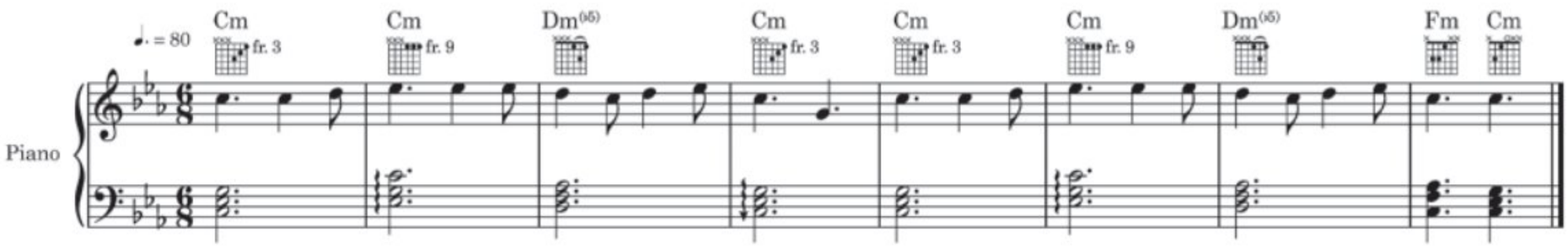


Figure 5.55 'Incy Wincy Spider' with a minor twist!

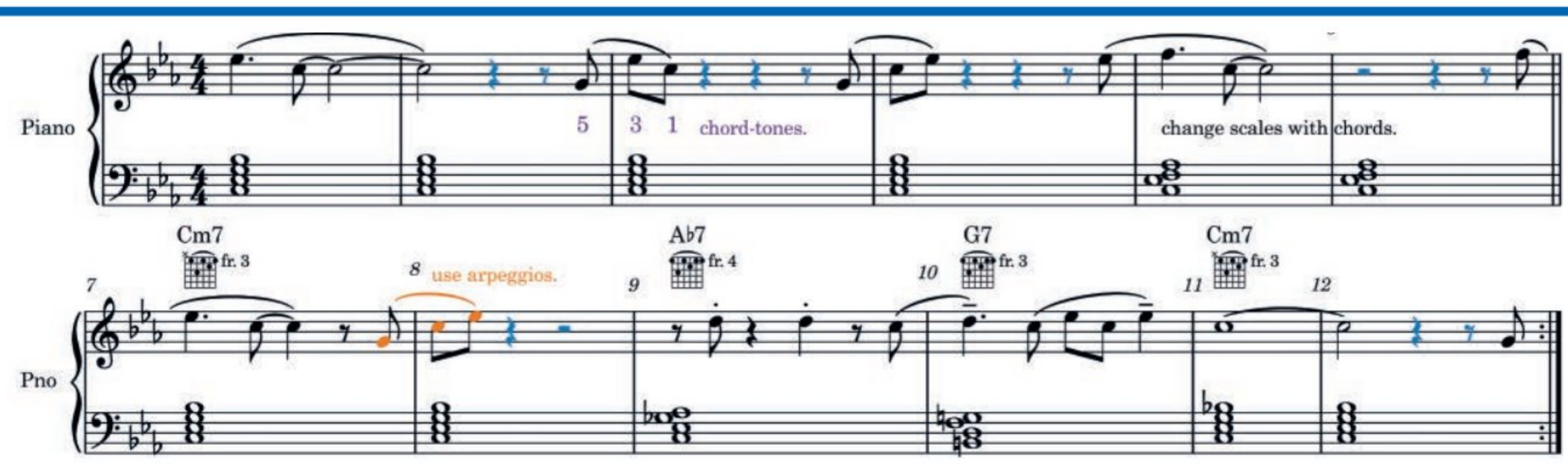


Figure 5.56 Structural chart for 'Equinox'

Assessment opportunities

In this activity you have practised skills that are assessed using Criterion B: Developing skills and Criterion D: Responding.

To what extent is improvising truly making music up on the spot?

Reflection



■ **Figure 5.57**

To end this chapter, ask yourself: Did you discover the relationship between play and 'being creative'? Have you found a new appreciation for the inner workings of music?

In this chapter we have *examined* music from the viewpoint of play and experimentation, and how artists and musicians find their way to these points. By **identifying** the key components of line, rhythm and space, it helped *explain* how we can improvise, how we can **develop** a musical vocabulary and how we can appreciate all genres of music. You will be able to **formulate** clear and musical reasons for why some choices will work, and why others will not. More important, you will have discovered the value of working in groups and utilising each other's ideas to improve your own responses.

By thinking through the creative process of jazz musicians, looking at Indian ornaments or layering samples, you have done more than interact with music; you have begun to understand its make-up. Your portfolio has the evidence!

SOME SUMMATIVE OPTIONS TO TRY

Use these ideas to apply and extend your learning from this chapter. These problems can be assessed using any of the strands suggested above the summative activities. The presentation and portfolio requirements are given after the description.

THIS TASK CAN BE USED TO EVALUATE YOUR LEARNING IN CRITERION A AND CRITERION D (ALL STRANDS).

SUMMATIVE 1

There are many ways for you to improvise as a soloist, or within an ensemble. If your school has a class ensemble or band, you can work together on this task with a chart like 'Groovin' High'. Or, you can research a backing track from blues, jazz, lo-fi or R'n'B to play along with, for example
https://ytjamtracks.bandcamp.com/music

Then, with your instrument, begin to **explore** ways of playing rhythmic patterns, interval shapes, melodic lines and adding space to your improvised phrases. Identifying the process of your expression is what is important.

Hint

You can even find examples like this classic Hendrix track 'Little Wing' with a chord diagram to assist you:
https://youtu.be/kM1L94WAqhE

Presentation and portfolio

Just like Michael Price did with his improvisation diary, keep an active log book of experiments. Notate them in your portfolio in standard or graphic score. You can also keep an audio diary using software like GarageBand.

Your final performance will **demonstrate** both an understanding of the melody and harmony of the chosen work. See Michael Price's example video log from day one of his improvisation diary at
https://youtu.be/xaenRQ3ZDWI

THIS TASK CAN BE USED TO EVALUATE YOUR LEARNING IN CRITERION B AND CRITERION C (ALL STRANDS).

SUMMATIVE 2

Experiment, improvise and play your own version of a nursery rhyme (such as 'Incy Wincy Spider') or a folk tune (from anywhere in the world) on an instrument of your choice, for example: **www.bethsnotesplus.com/find-songs**.

Break down the process into finding a simple diatonic melody then, after sketching / drawing its melodic shape, sing / improvise several new lines to play alongside it. Depending on how often you repeat this process, you need to **identify** in your portfolio how you altered the line, rhythm and space of the original melody, including the variations you create.

Presentation and portfolio

Show the original nursery rhyme or folk tune that you have chosen. Label each entry in your portfolio, describing your melodic sketches and improvisation experiments (including ones that did not sound as good).

Present the chosen tune as a live or looped performance, showing the original melody along with your experimental versions. You can use real instruments or devices.

Portfolio presentation

Documenting and sharing

Keeping in line with all the activities, play and experiments, use the concepts discussed in this chapter to keep your improvisation diary going. Finding your own voice for expression begins by identifying and building the right musical vocabulary.

Use this table to reflect on your own learning in this chapter.

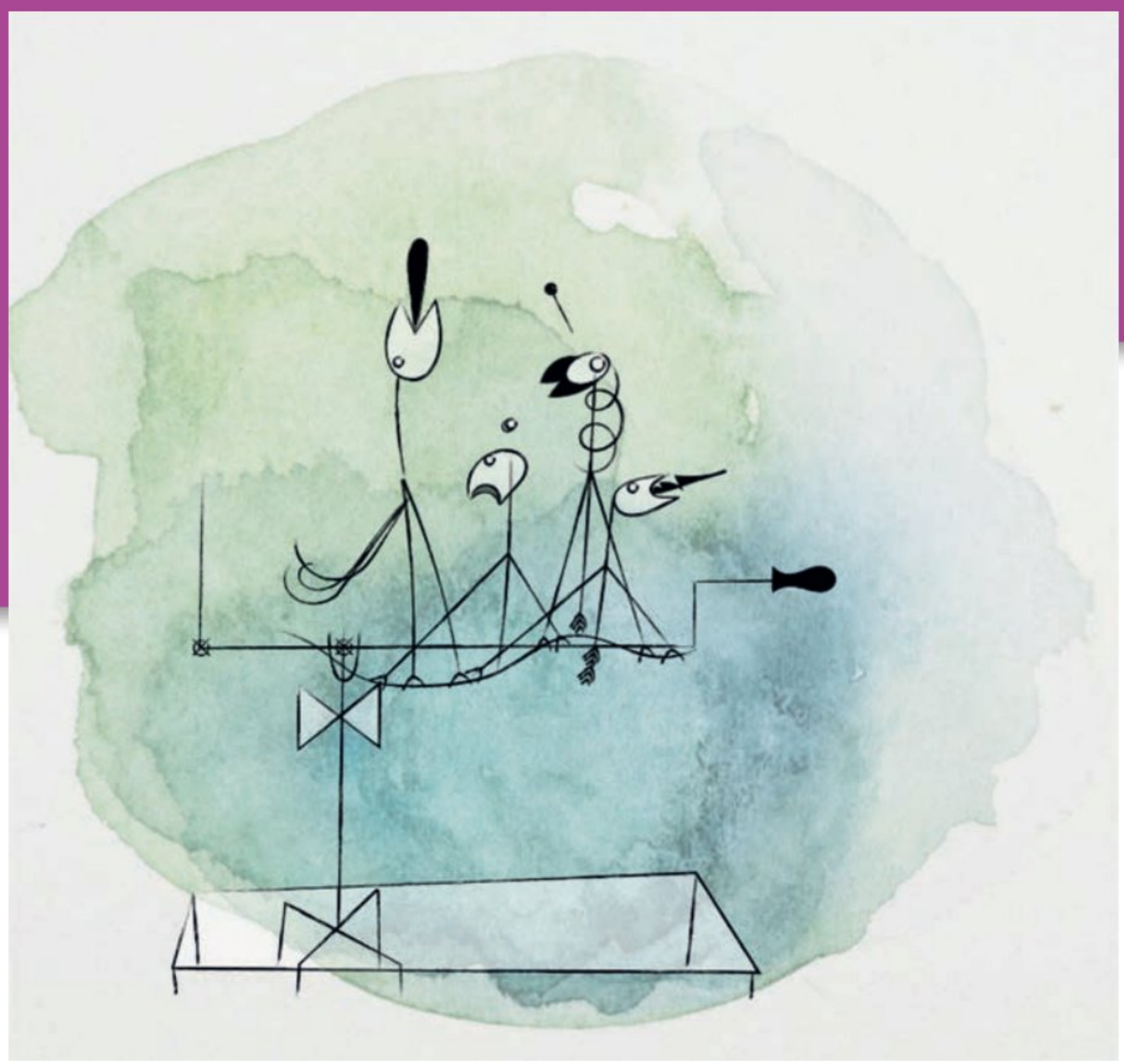
Questions we asked	Answers we found	Any further questions now?
Factual: What are intervals and how are they used? What is bebop? What is subdivision? What is harmonisation?		
Conceptual: Where do creative ideas come from? How does the concept of play improve our listening skills? How do other artists approach the concept of play? In what ways are the building blocks of music manipulated for improvising? In what ways do our local and global communities approach self-expression?		
Debatable: Is sampling really a creative process? To what extent is improvising truly making music up on the spot?		

Approaches to learning you used in this chapter:	Description – what new skills did you learn?	How well did you master the skills?			
		Novice	Learner	Practitioner	Expert
Collaboration skills					
Organisation skills					
Affective skills					
Reflection skills					
Transfer skills					

Learner profile attribute	Reflect on the importance of taking risks for your learning in this chapter.
Risk takers	

6 Can we hear images?

New meaning can be **communicated** when we experiment and **innovate** with **personal** and **cultural** forms.



■ **Figure 6.1** *Twittering Machine* by Paul Klee, remade in Keynote for MAC

CONSIDER THESE QUESTIONS:

Factual: What is a theme? What is a score cue? What is motivic development? What is tone-colour or timbre?

Conceptual: How can we see and hear colour? How can scales, modes or rhythms communicate feelings? How do chords evoke emotion? In what ways do artists create worlds of sound? How can ordinary objects be turned into sound?

Debatable: Is the combination of cultures an innovative method for expression? Does music enhance the meaning and / or message of an image or story? Do artists need to borrow from the past to create new ideas?

Now **share and compare** your thoughts and ideas with your partner, or with the whole class.

IN THIS CHAPTER, WE WILL…

- **Find out** how objects, symbols and art have inspired creative forms of expression from still images to animation and film.
- **Explore** methods of actively engaging in communicating the meaning that we perceive behind images, films, objects and symbols.
- **Take action** in sharing the methods we construct, which express our ideas to a global audience through 15 second creative projects.

These Approaches to Learning (ATL) skills will be useful…

- Communication skills
- Reflection skills
- Media literacy skills
- Creative thinking skills
- Transfer skills

Assessment opportunities in this chapter:

- Criterion A: Knowing and understanding
- Criterion B: Developing skills
- Criterion C: Thinking creatively
- Criterion D: Responding

We will reflect on this learner profile attribute…

- Communicators: We express ourselves confidently and creatively in more than one language and in many ways. We collaborate effectively, listening carefully to the perspectives of other individuals and groups.

Links to: Visual Arts; Film; English A; Language; Dance; Theatre

Visual Arts can connect with the entire unit from the set works studied, the collaborations between composers and artists as well as the stylistic approaches found with impressionism, expressionism, pop art, cubism and surrealism. Re-interpretation of visual / audio stimulus can be found across film, dance or theatre. Whereas the examples chosen in this chapter are modern visual artworks, English Language and Literature can just as easily transfer this to modern poetry and the works of Oscar Wilde, Bryce Shelley, Robert Louis Stevenson and modern-day authors.

KEY WORDS

scales	chromatic	texture
bass line	diatonic	compound
motif	chord extension	ekphrasis
mode	syncopation	

Prior knowledge

This chapter works on the premise of including all levels of learners. You will find it useful to know:

- how to play and identify scales, chords, bass lines, pedals, riffs or ostinatos
- how to play, notate and identify groups of rhythms aurally, including melodies
- how to work collaboratively to express musical ideas with body percussion, voice, instruments and technology
- what working within an ensemble means for balance and intonation, but also communication
- ways of describing music using pitch, duration, texture, structure, tone-colour, dynamics and expressive techniques to express ourselves
- how to approach rehearsing, experimenting and presenting musical ideas from active listening
- how to read or recognise elements of a musical score that express line, rhythm or space.

Examples, links and referenced materials will guide you further.

Portfolio presentation

15 second compositions

Within this chapter you will be challenged to keep an *improvisation diary* (inside or separate from your portfolio) to document a series of #15secondcreative opportunities. You can find an example of an Egyptian line-drawing in Keynote in the Teacher's Pack.



Figure 6.2 Egyptian line-drawing in Keynote with music composed by the author

The purpose of engaging in smaller timed tasks, with a given visual stimulus, is that you can transfer any idea, concept or skill that you have learned into an immediate product for reflection. Your process will become well documented as you uncover different creative strategies and share them for feedback. Part of researching global artists is that you engage with diverse approaches. Stick to your school's recommendations for sharing creative work on social media and develop a panel within your class who can comment on your creations.

How can we see and hear colour?



■ **Figure 6.3** Kandinsky's stage image for *Great Gate of Kiev* 1928

THE RUSSIAN CONNECTION

Wassily Kandinsky reportedly had synaesthesia, which enabled him to see sound and hear colour. This is why his paintings sought to communicate these concepts. Combined with the work of the late Romantic composer Modest Petrovich Mussorgsky (1839–1881), Kandinsky found a way to bring his *Gesamtkunstwerk* (total / combined work of art) to life.

Mussorgsky's friend Viktor Hartmann was an architect, designer and painter, who died of an aneurysm at 39. The exhibition that Mussorgsky attended of his late friend in Saint Petersburg resulted in ten piano pieces of unique Romantic and Russian design. Kandinsky was never to meet Mussorgsky, but *Pictures at an Exhibition* illustrated the idea of a *Gesamtkunstwerk* for him. In 1928, with his own sets, lights, colour and geometrical shapes for characters, Kandinsky produced a stage production of Mussorgsky's *Pictures at an Exhibition* to great success. Instead of repeating the same images from Viktor Hartmann, Kandinsky turned the music into images. You can watch an approximate version of it here: **https://youtu.be/H9dJJ7_3nrk** as sadly the original sets and artwork have not survived.

ACTIVITY: Kandinsky & Mussorgsky
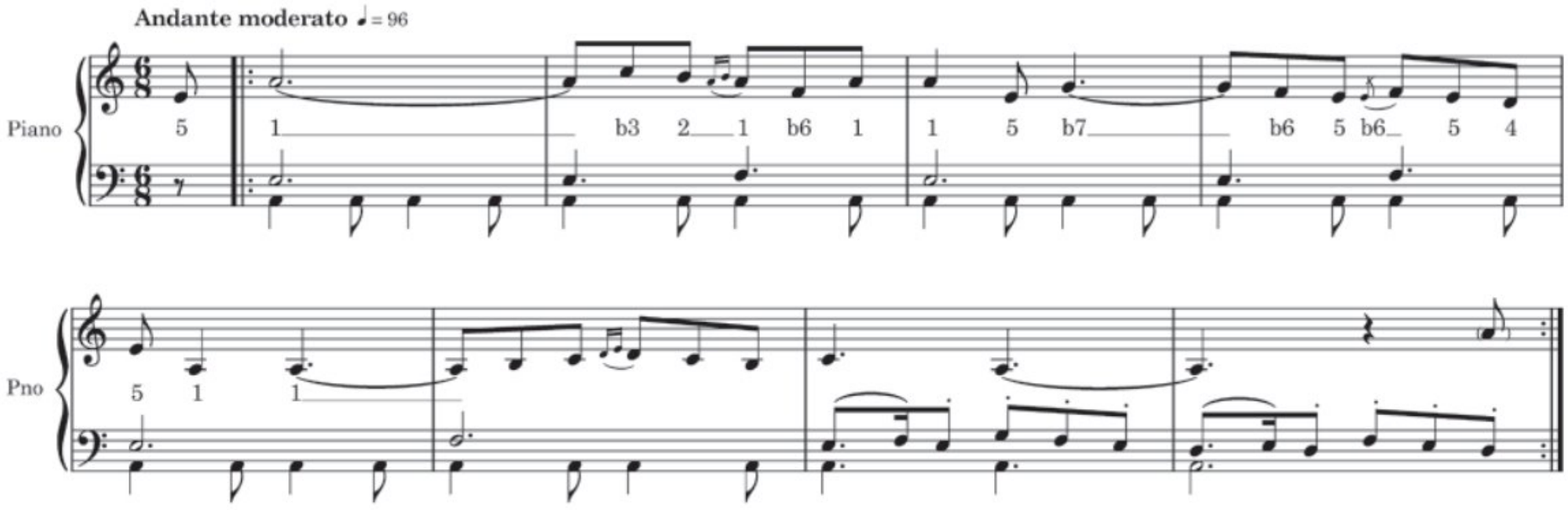
■ ATL

■ Transfer skills: Making connections between subject groups and disciplines

Listen to the piece 'The Old Castle' from *Pictures at an Exhibition* on the playlist or with the Kandinsky-inspired video here: **https://youtu.be/H9dJJ7_3nrk**. This activity will have you playing and painting with one of the most melancholy of all **modes**, the **Aeolian mode**.

Hint

Remember in a major **scale** there are 7 notes. The Aeolian mode is a scale built on the 6th degree of the scale. Its scale formula is 1 2 b3 4 5 b6 b7 8.



■ **Figure 6.4** Transposed *The Old Castle* theme into C major (A Aeolian) with pedal for Orff Schulwerk instruments

ACTIVITY: Picasso & Stravinsky

ATL

- Communication skills: Interpreting and using effectively modes of non-verbal communication

We will be going to the final **movement** of Stravinsky's *Pulcinella* 'Suite VIII' where small melodic ideas called *motifs* are repeated throughout the orchestra. Your mission will be to **identify** each time one of these ideas repeats, and when it changes. But you won't be composing or performing them; instead, you are to draw them with shapes and label them to describe their sounds:

1. **Listen to the work on the playlist and make a structural sketch in your portfolio. Try to show section 1, section 2, section 3, and so on, describing what happens in each section.**
2. **Once you have decided on your structural sections, use shapes to show how many times a musical idea repeats (for example three triangles could be the opening pattern that repeats three times).**
3. **Compare your sketches and identified motifs to a friend's. Can you add to each other's work?**

Assessment opportunities

In this activity you have practised skills that are assessed using Criterion A: Knowing and understanding and Criterion C: Thinking creatively.

Pablo Ruiz Picasso (1881–1973) was a Spanish painter, sculptor, pioneer of cubism and a close friend of Russian conductor and composer Igor Stravinsky. In May of 1920, a new ballet called *Pulcinella* opened at the Paris Opéra. What was unique about this play was that the story and the choreography were by dancer Léonide Massine, the music by Stravinsky and the costumes and sets by Picasso: exemplifying the nature of a *Gesamtkunstwerk*!

Ensemble connection

Twittering Machine by Brian Balmages

This work for Band is a great extension into setting music to visual art. It beautifully sets the tone and 'colour' of Paul Klee's 1922 painting. The melodies and accompaniment patterns make this an ideal study work for this chapter: **https://youtu.be/twO2zbb18wM**

1. **This mode has a very distinct 'colour'. As you listen to the work, draw a small sketch of what you think this melody sounds like. Include in your drawing lines, shapes and anything that repeats; you can also use colour or images.**
2. **Using the melody notated in Figure 6.4, sing through it as a class using note names or solfeggio. If you have xylophones or drone-like instruments, have them provide the low A pedal note.**

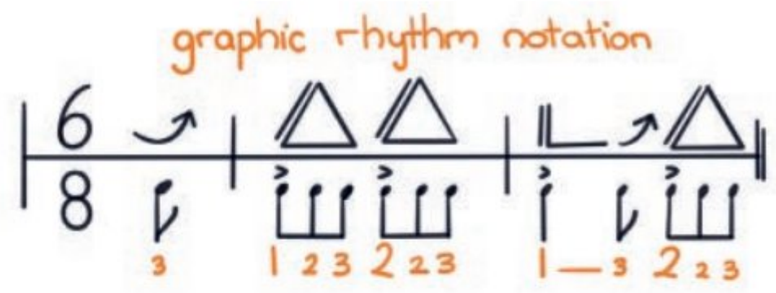


Figure 6.5 Diagram for counting in 6/8 time to follow, or conduct as you listen to 'The Old Castle'

3. **Divide into pairs and, using the exact same notes as in Figure 6.4, improvise your own theme in Aeolian mode. Some options to alter Mussorgsky's theme include:**
 - **a Play it backwards (called retrograde).**
 - **b Improvise a new melody that ascends from A, instead of going down.**
 - **c Repeat a small motif or melodic idea.**

Building from the works of others is how we will **evaluate** different forms of expression. Playing these works puts the music at your fingertips.

Assessment opportunities

In this activity you have practised skills that are assessed using Criterion B: Developing skills and Criterion D: Responding.

How can scales, modes or rhythms communicate feelings?



■ **Figure 6.6**

A PIXAR STORY (PART 1)

ACTIVITY: Taking a line from *Up*

■ ATL

- Media literacy skills: Comparing, contrasting and drawing connections among (multi)media resources

Pixar's *Up* was released in 2009, and it includes one of the saddest–loveliest scenes at the beginning of the film. Composer Michael Giacchino (b. 1967) composed a series of melodic lines that not only communicated the intent of the story, but captured each emotion. The purpose of this activity will be to analyse the melodic line of his track 'Married Life', and **identify** how a repeated melodic idea, passed around the ensemble, can communicate so much emotion.

1 **As a class, listen to the track on the playlist. A transcription of the opening melody is provided in F Major.**

THINK–PAIR–SHARE

The combination of visual elements with music is a powerful connection for storytelling. Whether the images are still or animated, the ability to communicate a vocal line or perform a **rhythm** can bring art to life. Before animation became mainstream, a film called *Godzilla* was released in Nagoya, Japan in 1954 using something called **suitmation**. Whether the *Godzilla suitmation* directly inspired composer Eric Whitacre or not, one of his amazing works for both choir and ensemble is 'Godzilla Eats Las Vegas!'. In his own notes, Whitacre encourages the performers '… to go crazy: wear showgirl costumes, Elvis costumes, act out scenes on stage, **use** video and lighting – anything to get a laugh'. You can watch it performed by the Bel Canto Choir Vilnius and conducted by Whitacre here: https://youtu.be/lhF9aKAUdeY

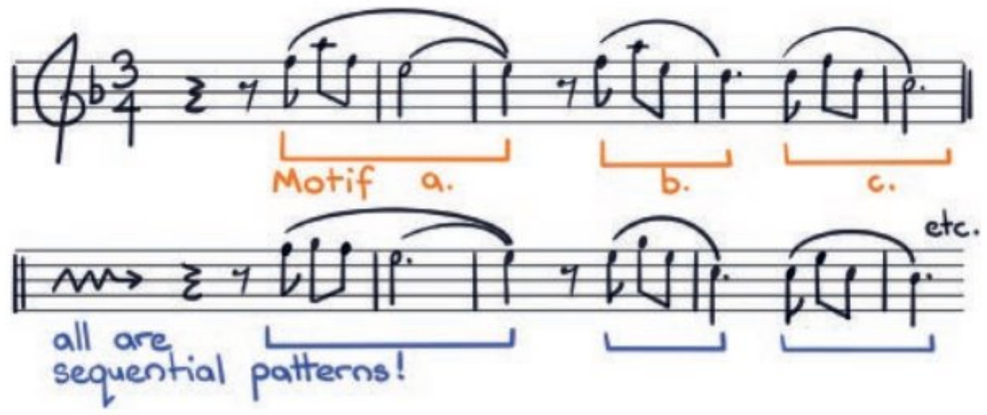
Think about the question: How can scales, modes or rhythms communicate feelings?

The work incorporates around thirty different styles, from mambo and film-type **ostinatos** to lounge music and thriller effects. It engages each member of the ensemble whole heartedly. When you have your answer, **pair** with a friend, **share** your thoughts with them, and **present** a joint answer to your class.

2 **In your portfolio, draw a structural diagram showing a the melody, b how often it repeats and c whether there are ever any connecting lines that are different; these could be blocks, triangles, squares or squiggles.**

3 **Listen to the track one more time to identify and describe which instruments are playing the melody in each of your 'structural diagrams'.**
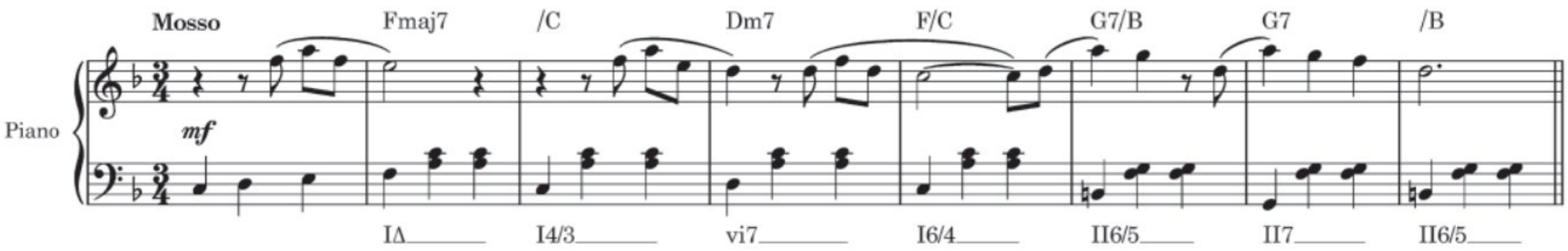
Giacchino cleverly repeats his melody, which is a **sequence** of a short group of notes called a *motif*. He repeats this with slight variations, such as making it a little higher or lower, and then even augments it for the last few measures.



■ **Figure 6.8** 'Married Life' line motif variations

◆ Assessment opportunities

In this activity you have practised skills that are assessed using Criterion A: Knowing and understanding and Criterion B: Developing skills.



■ **Figure 6.7** 'Married Life' by Giacchino transcribed with chord progression

EXTENSION

Ensemble performance: Samuel Hazo's *Blue and Green Music*

This work for concert band was written in 2011 by Hazo to depict American artist Georgia O'Keeffe's 1919–1921 painting of the same name. O'Keeffe was inspired by Kandinsky's philosophy of colour, sound and the natural world. You can hear a combination of sustained **chords** and movement in the piece. Visit www.halleonard.com/product/viewproduct.action?itemid=4003045&promotion=1046& to hear and view a preview score.

The music opens with a repeated figure in the tuned percussion. This, with the combination of percussion and winds, creates a texture that repeats throughout the work, including a dramatic version in brass and drums around 2'54.

ACTIVITY: The incredible motif

ATL

- Creative thinking skills: Creating original works and ideas; using existing works and ideas in new ways

> *"As a film composer, your job is not to write music; your job is to tell a story."*
>
> *Michael Giacchino*

Two more of Pixar's films, *Ratatouille* (2007) and *The Incredibles* (2004), both involved Giacchino as the composer. And in each work, a new world of sound was **created**. How did he do it?

The blues scale

For the track called 'The Glory Days', Giacchino uses a simple method to hook his listener into the super-hero fun. It is a repeated F blues scale that uses a technique called *question and answer*, common to big band playing. This is where a motif is played as a question or call, and then another layer responds, as if answering a verbal question.

The blues scale is featured as part of the action, espionage and comedy in *The Incredibles*. **Using** Figure 6.9, play through the F minor blues scale on your instrument and create three short *motifs* (remember: melodic ideas) that would work within the opening scenes of *The Incredibles*. Next, team up with a friend and take turns playing these themes one after the other in a *question and answer*-type pattern. Make sure you record your creations!

Motifs for rats

Within the film *Ratatouille*, Giacchino again uses melodic lines to create short motifs for the film's characters. For example, in the track 'This is me', where Remy the rat introduces the audience to his life, a quirky rhythmic line is heard in the low wind section of the orchestra – with an echoing answer!

Copy this theme into a notation program like MuseScore for bassoon and **develop** two more 'answers' in measures 2 and 4. Giacchino is able to find just the right partnering theme each time for his motifs. What will you make?

Assessment opportunities

In this activity you have practised skills that are assessed using Criterion C: Thinking creatively and Criterion D: Responding.
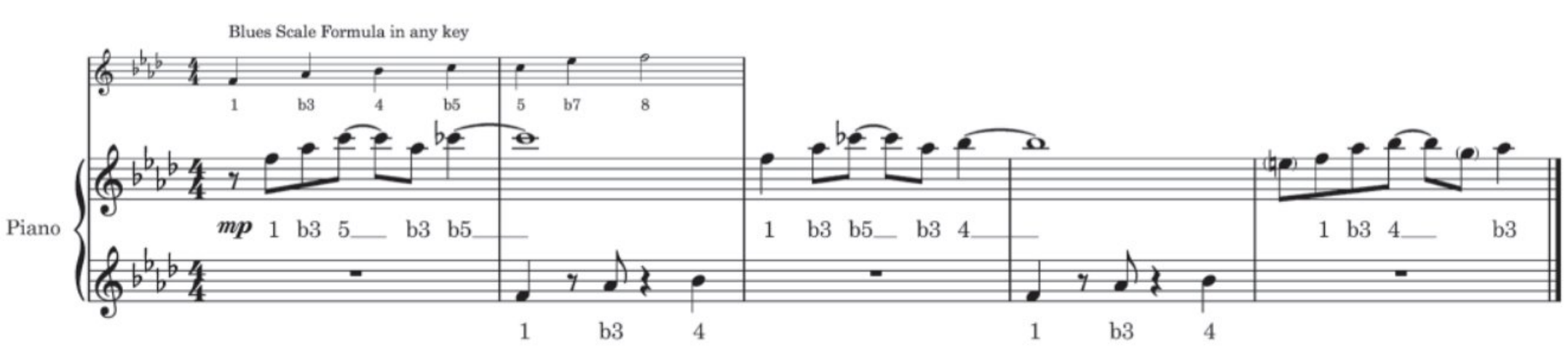


Figure 6.9 'The Glory Days' question and answer pattern annotated with blues scale
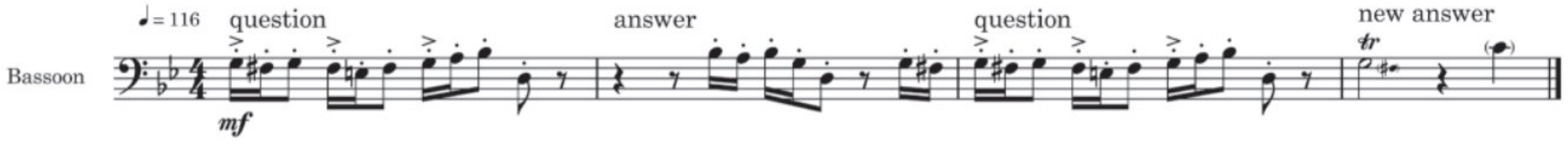


Figure 6.10 'This is me' theme for the bassoon

How do chords evoke emotion?

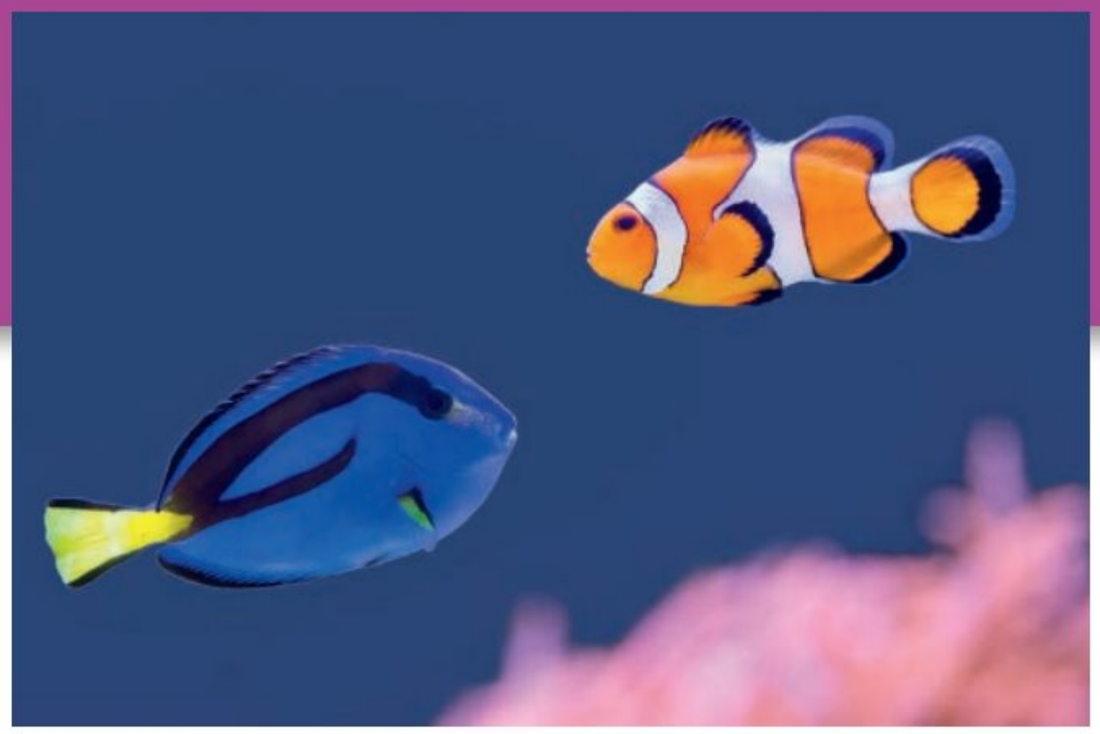
A PIXAR STORY (PART 2)

Before the films *Up* (2009), *Inside Out* (2015) and *Brave* (2012), there was another opening animated scene that brought tears from its audience. The track 'Nemo Egg' by Thomas Newman from the Pixar film *Finding Nemo* in 2003 has a beautiful **chord progression** in the strings that physically communicates sadness and change. Like an artist with visual colour, Newman used the **tone-colour** (timbre) of the string section, piano and percussion to see-saw, or move between, two chords like waves. Listen to the track on the playlist while you follow Figure 6.12.
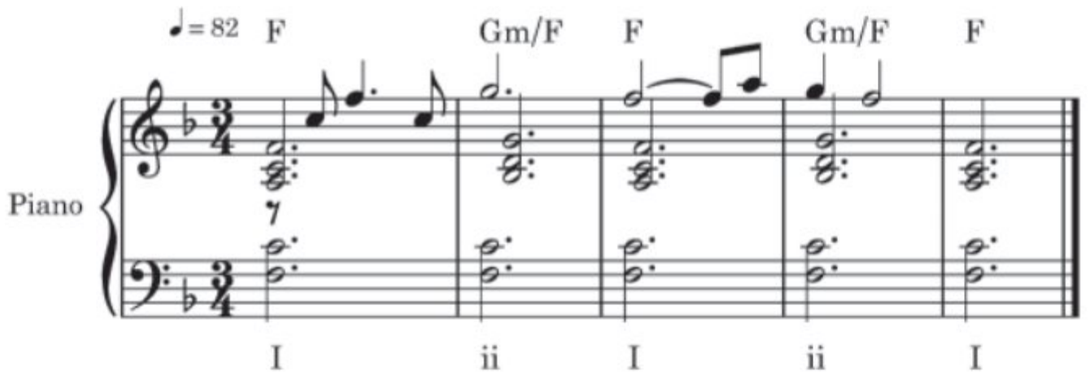
The opening uses only two chords in the key of F major. If you remember the major chord formula from Chapter 4, this works out to be chords I (F) / ii (G minor). However, Newman keeps the note F as a drone underneath these changes.

Towards the end of the track comes that heart-tugging movement of four chords, seen in Figure 6.13. These four chords use extended notes and follow the progression of I - IV6 - vi9 - IV.

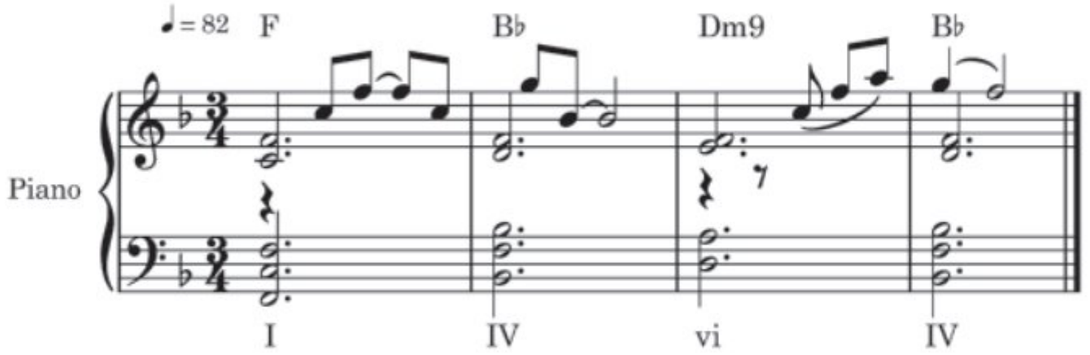
The moving back and forth of two chords to what we call the *tonic* feels like a musical 'home'. Then the extended chords bring in enough contrast that we hear and feel the change.



■ **Figure 6.11**



■ **Figure 6.12** Opening see-saw chords with pedal in 5ths



■ **Figure 6.13** *Finding Nemo* heart-tugging chords

ACTIVITY: *Nemo*'s chords

ATL

■ Transfer skills: Combining knowledge, understanding and skills to create products or solutions

1. **Play through the different chords and choose two that you can perform one after the other in a see-saw-type fashion.**
2. **Find a partner and together perform these two chords, adding in short melodic motifs that you play or sing.**
3. **Technology can be your friend, as loops or beats are welcome accompaniment patterns.**



■ **Figure 6.14** GarageBand chords for *Finding Nemo* task

Once you are confident that you have a pattern rehearsed enough to record, add it to your portfolio.

Assessment opportunities

In this activity you have practised skills that are assessed using Criterion A: Knowing and understanding and Criterion C: Thinking creatively.

CREATIVE QUESTIONS

Go to the playlist to listen to Mahler's 'Symphony #3 In D Minor, Movement 1. Kraftig, Entschieden'. Then, in groups:

1. **Identify and brainstorm any themes / emotions you feel are communicated in listening to this movement.**
2. **Look over the list together, and transform some into questions that challenge the imagination, using: What would it be like if…? What would change if…?**
3. **Choose one question to explore imaginatively and think through all of its possibilities. You can do this by writing a story, drawing a picture or singing it.**
4. **Share with your class the theme / emotion you chose and, using timings on the audio track, demonstrate *why* to the class.**

Did you feel that this work was written back in 1896 or more recently? As a final discussion point for reflection: What in the music itself made you think this?

Pixar released a film in 2008 called *Wall-E*, where a little robot ends up learning how to dance – in space. The composer Thomas Newman does an amazing job of representing this concept, using specific ostinatos and chords on the track 'Define Dancing'. You can watch the film yourself or listen to the score on the playlist.

The music is broken into two frameworks, a harp ostinato and then strings. Once again, Newman uses the technique of see-sawing (alternating) between two chords to create a score that moves. He also adds a **Lydian mode** melody to make the scene come alive.

ACTIVITY: *Wall-E* in space

ATL

- Creative thinking skills: Applying existing knowledge to generate new ideas, products or processes

In a notation program, pick two instruments that have an immediate attack to their sound (such as harp or guitar, marimba or xylophone). **Using** the chords notated below, complete the following:

1. **Notate the two chords as shown, with the D♭ remaining as a pedal underneath.**
2. **Notate the triads for harp, marimba or piano with four repeated measures (copy and paste works well here).**
3. **Using different rhythmic values, break these chords up into a single, repeated rhythmic pattern.**
4. **Play back your creation, making sure you can still hear the notes of each chord.**

You have just written something like a film composer! You could extend yourself by repeating this process with a Lydian-style melody, copying the scale formula of 1 2 3 #4 5 6 7 8.

Assessment opportunities

In this activity you have practised skills that are assessed using Criterion B: Developing skills and Criterion D: Responding.
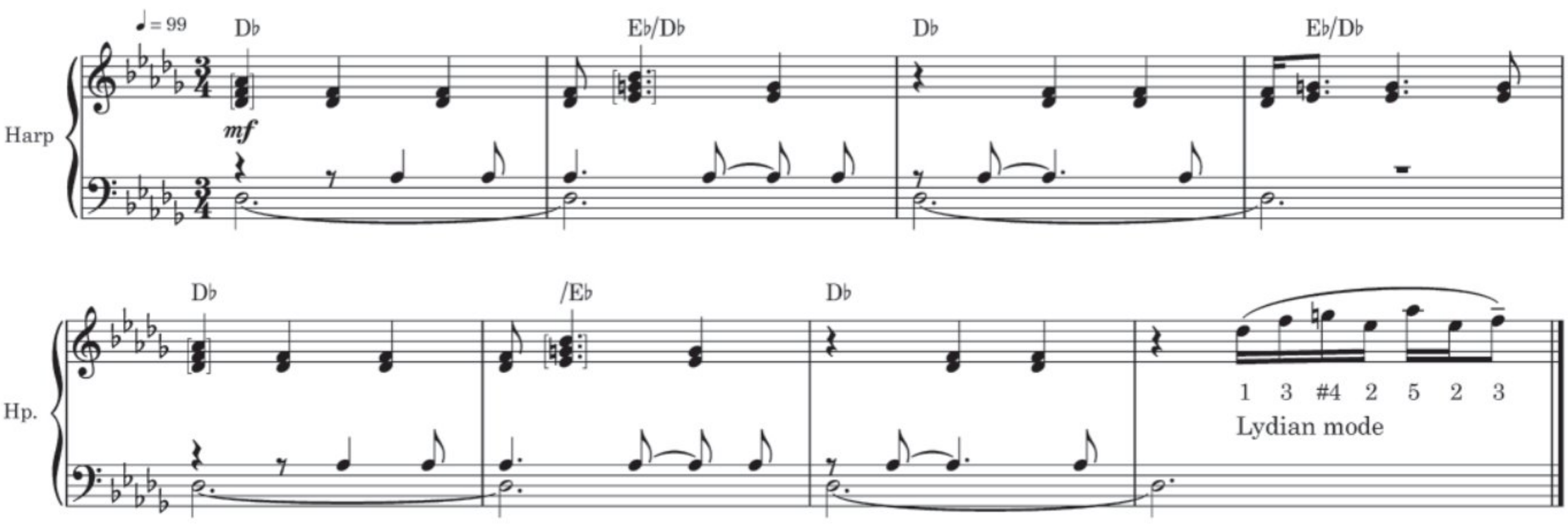


Figure 6.15 D♭ I-E♭ II harp notated in square brackets showing *Wall-e* pattern created from these notes

What is a score cue?



■ **Figure 6.16**

WHAT IS THE SECRET SOUND?

Netflix and other TV streaming platforms work hard at releasing animated shows for kids. Have you ever stopped to think that playing or writing music for such platforms could involve you one day?

Carmen Sandiego was an educational computer game released in 1985 that had players scouring the world to find Carmen and her henchmen. In 2019, Netflix released their animated version to a new theme song written by Jared Lee Gosselin and sung by Raquel Castro. You can watch it online here: **https://youtu.be/ILTWNFH4F5g**. Clearly, the music is specifically designed to fit the action and story of the show, but also the colour red, which is featured prominently throughout the clip.

Music exploration: Secret agent chords

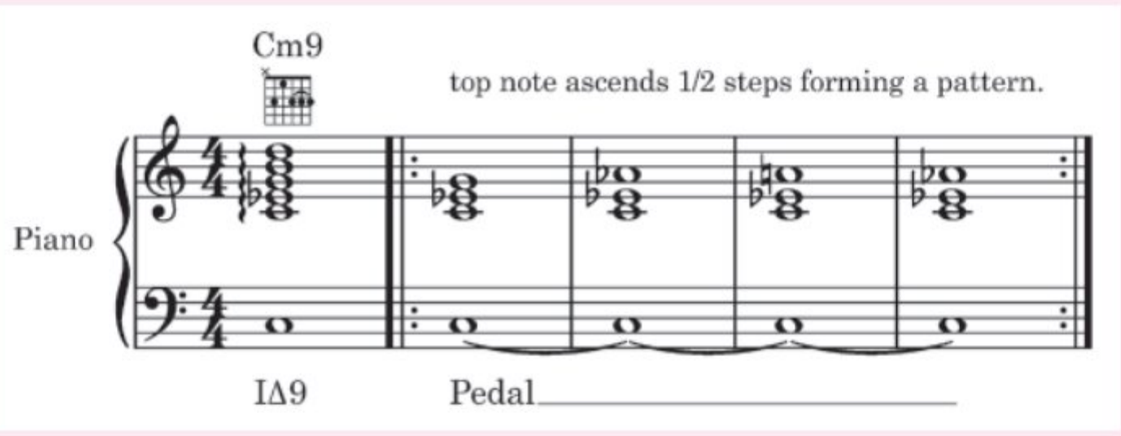
The use of a certain scale or chord can paint a definite picture for the audience. For example, if something happens during the action of a scene, music is often called upon (as a cue) to enhance or evoke a response. From the music of *The Incredibles* and *Camen Sandiego* back to the iconic sounds of the James Bond films, there are certain 'spy chords' that you should get to know.

The C minor major 9th chord is the '… villain swings around in the chair, holding a white cat, and says, "welcome *agent x* to my trap,"'-type of sound. It takes a normal C minor triad and, using the notes of the C minor scale, builds on top a B and a D, which are the major 7th and 9th notes of C minor major 7 add 9.

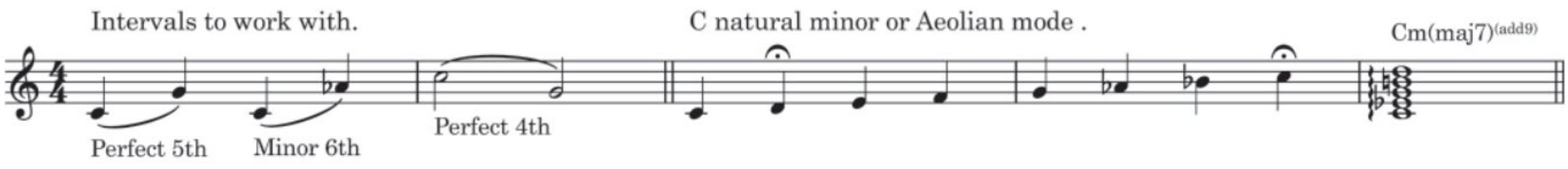
Hint

In jazz and other forms of contemporary performance, a Δ is used to label major7th chord types.

The other typical 'spy sound' is again a minor triad, but with each playing of the chord, the top note (the 5th of the scale) is moved up by steps. Play through Figure 6.18 to use in your animated scoring tasks.



■ **Figure 6.18** Spy chords!



■ **Figure 6.17** Figure 6.17 Can you work out the tune to 'Carmen Sandiego' using these intervals and the C natural minor scale?

ACTIVITY: Spy film motifs

ATL

- Communication skills: Following instructions accurately. Giving and receiving meaningful feedback

'Spy chords' provide action, silent-creeping or even mystery-solving cues depending on how they have been **orchestrated**. You can listen to any such cues in films like those in the James Bond series, *The Incredibles* or some of the original *Batman* animations scored by Shirley Walker. The band MUSE combined the spy chords in their 2012 track *Supremacy*.

Your mission is to take the chord progression of a scene from *The Incredibles* and add your own ostinato or motifs to it: just like the flamenco guitar in *Carmen Sandiego* or guitar riff in spy films. The scene is where Mr Incredible is snooping around a villain's computer for details on other 'supers'; it can be found on the playlist as *Kronos Unveiled*.

1. **Listen to the track on the playlist to identify and describe any repeated ostinatos in *Kronos Unveiled*.**
2. **Using the chord progression below, play it on a guitar / piano, or enter it into a music software program.**
3. **Form a group of musicians to play through the four chords. Using your ears, and the C minor scale idea from *Kronos Unveiled*, improvise your own spy ostinato.**
4. **As a group, decide how you will perform and repeat the motifs that you created.**
5. **Record and save your performances as you may be able to extend them for further animations or summative projects.**

Assessment opportunities

In this activity you have practised skills that are assessed using Criterion A: Knowing and understanding, Criterion B: Developing skills and Criterion C: Thinking creatively.

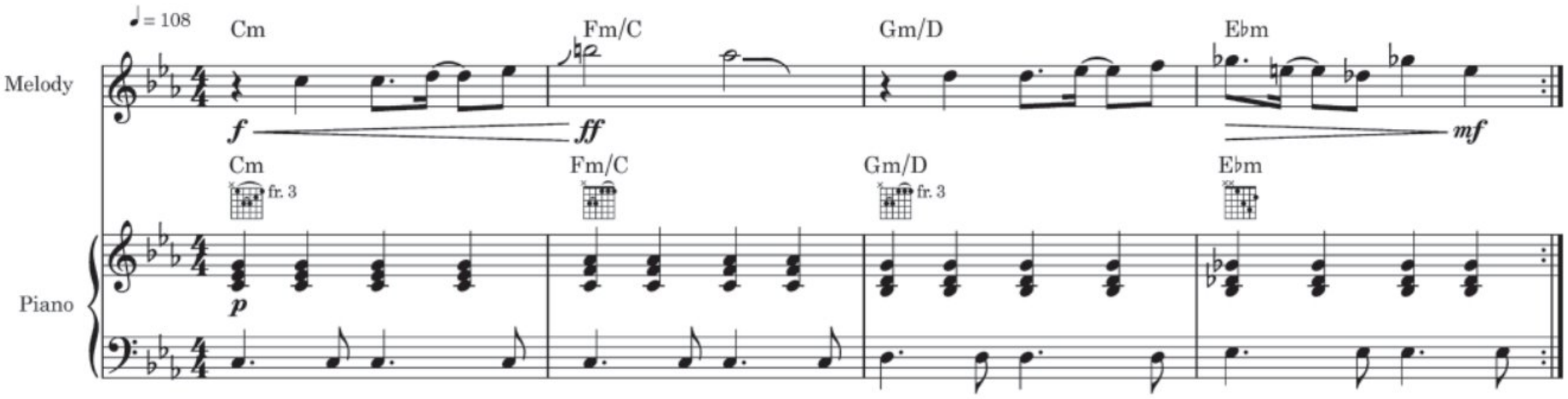


Figure 6.19 *Kronos Unveiled* spy ostinato activity – watch the climbing bass notes!

THINK–PAIR–SHARE

What do you **think** the colour red sounds like?

Brainstorm a list of ideas and write them down in your portfolio.

Pair with a friend and, after watching the *Carmen Sandiego* opening theme again, sketch or mind-map every sound you feel portrays the colour red. This could mean the use of the flamenco-like guitar lines or even the drum loop in the background.

Once you have collected a list of ideas for 'red music', **share** your findings with the class and discuss your reasons. You may find many people associate the same things with different shades of colour.

Portfolio presentation

Using the application Keynote for MAC, a series of artworks has been animated for your #15secondcreative project. You can find it in the Teacher's Pack.

15 second composition 1

Castle and Sun (1928) demonstrates a structure based on geometric shapes, colour and expressionism. Your task is to create, record, perform or notate a short 15 second work to accompany this image. Start your process by drawing in your portfolio an outline, much like a sketch or pattern, of the music you want to make. Then decide on:

1 **Line**: Which melodic lines will you focus on? What type of motifs will you use?

2 **Rhythm**: How will you use repetition? How many motifs will you repeat?

3 **Space**: Will you fill out every possible colour and shape with a sound? Or use one idea with different instruments?



■ **Figure 6.20** Keynote animation of *Castle and Sun*

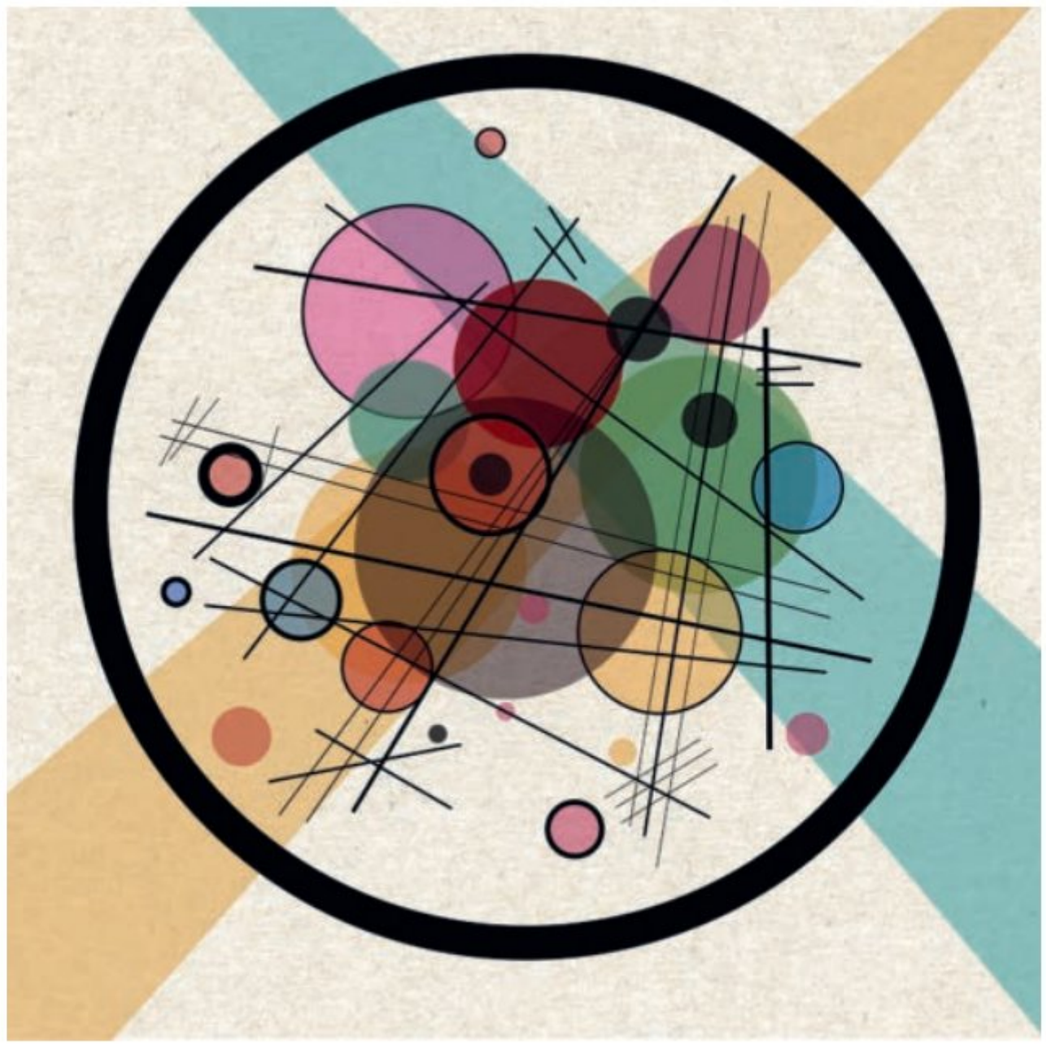
15 second composition 2

Circles in a Circle (1923) demonstrates Kandinsky's distinctive style from the early 1920s, when he began teaching at the Bauhaus in Germany. Your task is to create, record, perform or notate a short 15 second work to accompany this image. Start the process by drawing in your portfolio an outline, much like a sketch or diagram, of the music you want to make. Then decide on:

1 **Line**: Decide which melodic lines, scale or modes fit with the image.

2 **Rhythm**: How will you use repetition? Is this represented in the image?

3 **Space**: Will you fill out every possible colour and shape? Or focus on a few?



■ **Figure 6.21** Keynote animation of *Circles in a Circle*

You can use music software such as GarageBand, Logic Pro X or SoundTrap to present your music. Be adventurous!

! Take action

! Find out how objects, symbols and the arts have inspired creative forms of expression from still images to animation and film.

! Explore methods of communicating the meaning we perceive behind images, films, objects and symbols.

! Discover and curate how other cultures, artists and movements in art have reshaped music.

! Music and art have often been used to express, protest or support causes, both personal and global. Research and raise awareness of the effect a single artist, or song, has had on history. You could research James Brown's connection to the US Civil Rights Movement of the 1960s–70s or the 'Singing Revolution' in Estonia 1939 (**https://singingrevolution.com/about-the-film**). You can even use social media to help share your research with your community.

In what ways do artists create worlds of sound?



■ **Figure 6.22**

SYNTHESISERS, SPIDERS AND ROBOTS

Game scoring has always been a unique art form. From the early days of 8-bit sound cards to orchestral–rock scores, composers are given the chance to craft entire worlds for exciting storylines. Richard Vreeland, aka Disasterpeace, is a composer whose musical ideas are a fusion of both old and new, impressionism and synthesisers. The world he crafted for the 2016 award-winning game *Hyper Light Drifter* is a combination of creative composing and sound design: 'I was definitely channeling ideas about impressionism,' says Vreeland. 'Composers like Debussy and Ravel – the way they extend traditional harmony into different places.'

I USED TO THINK… BUT NOW I THINK…

Using the podcast at: **https://art19.com/shows/the-annotator** and article **presented** by A Sound Effect entitled 'Behind the Spectacular Sound Design and Score for *Spider-Man: Into The Spider-Verse* (**www.asoundeffect.com/spider-man-into-the-spider-verse-sound**), you will get to experience sound in an entirely new way. Spend some time listening to composer Daniel Pemberton talk about his process of the 'spider-verse' sound. If it is possible for you to visit his Twitter feed, there is a demonstration of character themes, synthesis performances and scratching, as included in the final score:

- **Elephant noise for the Prowler character: https://twitter.com/danielpemberton/status/1075816351611142144?lang=en**
- **DJ scratching the composed score: https://twitter.com/danielpemberton/status/1079380689844346880?lang=en**
- **Creating drum high hats from scratching spray cans: https://twitter.com/danielpemberton/status/1075758603523538945?lang=en**

After going through the article and Twitter examples, write in your portfolio a sentence about *sound design* starting with **I used to think…** and then write a second sentence starting with **But now I think…**.

Share your thoughts with a friend. Can you come up with any other amazing uses of sound design in the music you listen to?







■ **Figure 6.23** Screenshots from @DanielPemberton and his Spider-Verse sound design

ACTIVITY: Game scoring 101

ATL

- Reflection skills: Developing new skills, techniques and strategies for effective learning

Listen to the track 'Vignette: Panacea' from the playlist and then directly compare it to the work 'Clair de lune No. 3' of the *Suite Bergamasque* by Claude Debussy.

You can feel the impression Debussy has on his track, but you can also hear the new directions Disasterpeace has.

1. **Using the chord diagram below, find a keyboard instrument to play the first chord from 'Vignette: Panacea'.**
2. **Once you can play and let ring the opening chord, improvise new patterns using the exact same notes. Play the chord backwards, or take the top part and turn it into an ostinato!**
3. **If you have GarageBand, a synthesiser or different instruments in your classroom, try to play your new pattern on that instrument. How much does it alter the tone-colour (timbre) of the chord?**

If you can place your fingers on a keyboard, and move to another shape **using** the same notes, you can make your own game score as well.

Assessment opportunities

In this activity you have practised skills that are assessed using Criterion B: Developing skills and Criterion D: Responding.
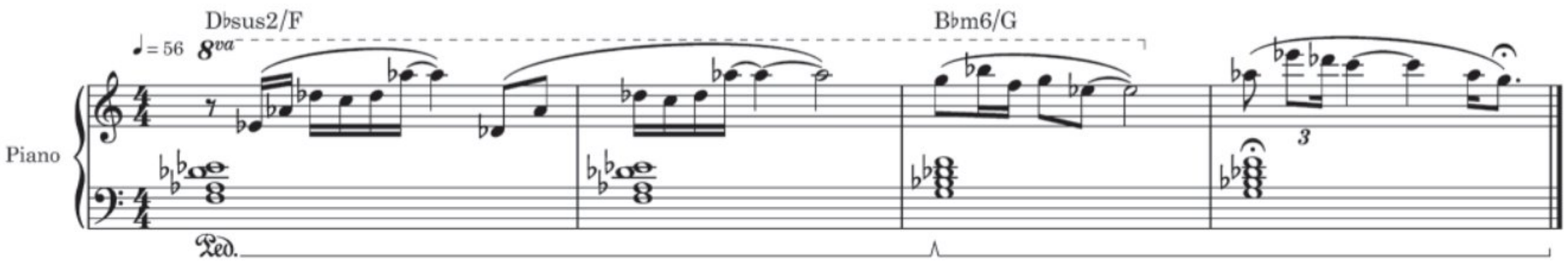


Figure 6.24 Two alternating chords with help pedal underneath and bass notes one step away from each other

Portfolio presentation

15 second composition 3

This time, your task will be to use a photo that you have taken of an everyday object and then to pixelate it with a free program like Pixaki for iOS (**https://rizer.co/pixaki**).

Your task is to create, record, perform or notate a short 15 second work to your newly pixelated image. Start your process by drawing an outline in your portfolio, much like a sketch or pattern, of the music you want to make. Then decide on:

1. **Line**: Decide on a chord, or melodic ostinato, that will fit with your photo.
2. **Rhythm**: How will you use repetition? Will you use percussion instruments?
3. **Space**: Will you use echo or sustain? Will you let one chord ring for the entire image?

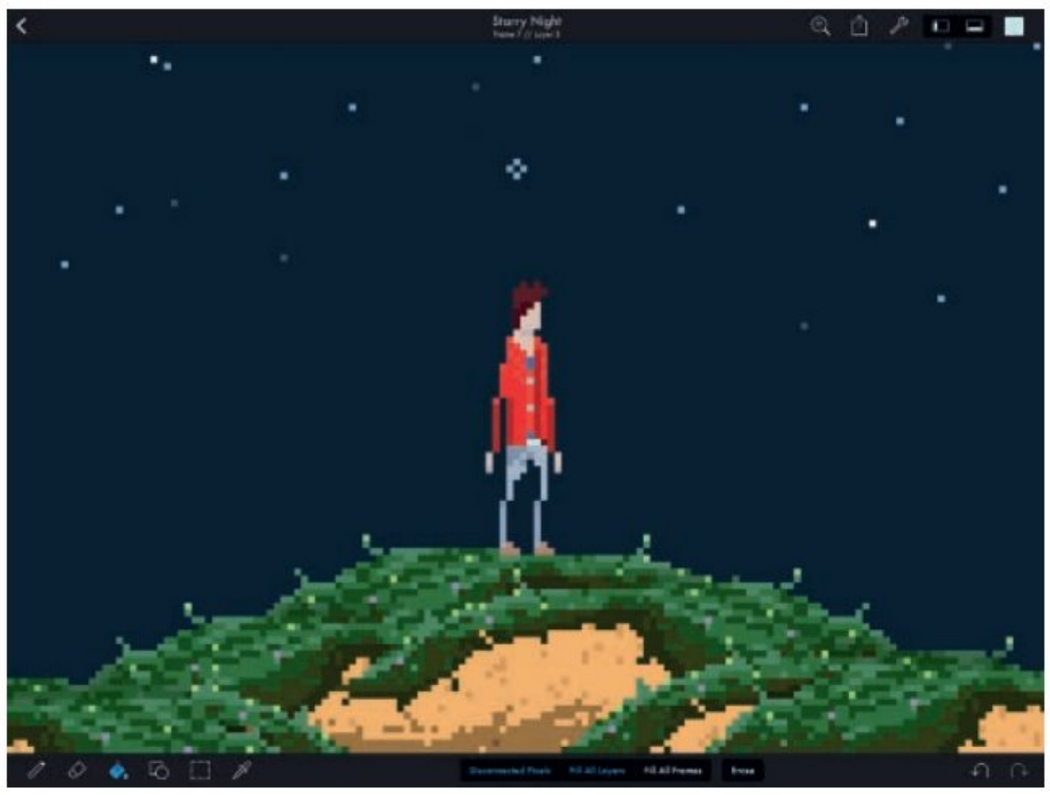


Figure 6.25 Pixel art example by Toby Ryan made with Pixaki

You can use music software such as GarageBand or SoundTrap to present your music. Be adventurous!

How can ordinary objects be turned into sound?



■ **Figure 6.26**
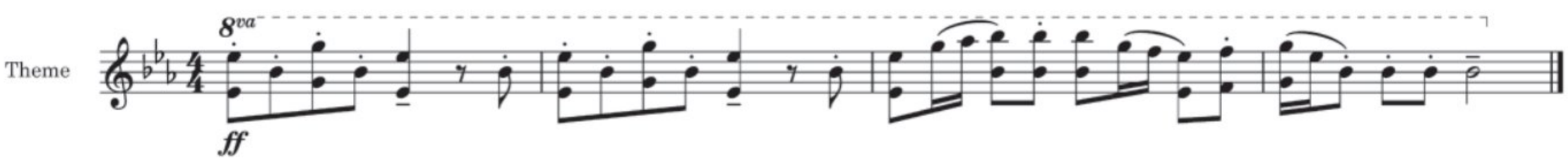
In 1960, John Cage, the composer of the now famous silent work *4'33*, visited the CBS game show 'I've Got a Secret' to introduce his theatrically timed piece 'Water Walk'.

Cage collects random objects, such as a pitcher, boiling water, an iron pipe, a bathtub and radios, to demonstrate his approach to making music. You can watch a video of his performance here: **https://youtu.be/SSulycqZH-U**

CLOCKS
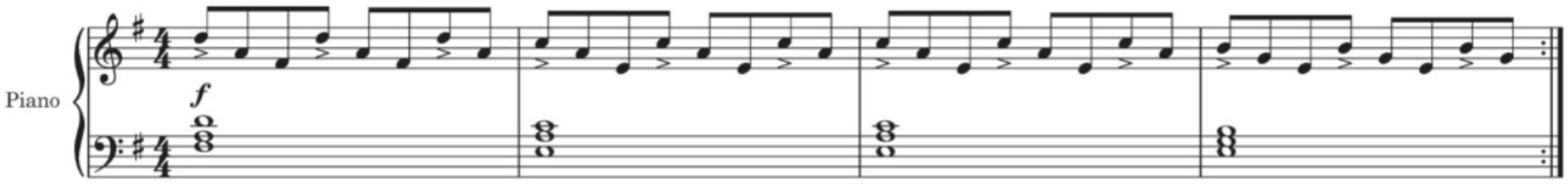
Taking an everyday object and turning it into music is an excellent activity in self-expression. You are free to look at the task in your own way, or you can self-impose structures to focus on being innovative. For example, taking the idea of a *clock*, you can limit yourself to using just the concept of rhythm to paint the sound you are after. Or you can limit yourself to 15 seconds and a guitar.

Zoltán Kodály used a clock within his folk opera *Háry János* to structure his protagonists' tall tales about defeating Napoleon's army. In the **suite** entitled the *Viennese Musical Clock*, Kodály uses a *melodic motif* to paint this idea in sound. Sing through the tune as a class and document the repeated phrase in your portfolio:



■ **Figure 6.27** Kodály's *clock* motif

If we jump forward to the 2002 hit song 'Clocks', we get a combination of rhythm and melody in the form of an ostinato. Both the drums and piano emphasise a pattern of 123+123+12 over a simple four-chord progression:



■ **Figure 6.28** Coldplay's *clock* progression using D - Am - Am - Em

CREATIVE HUNT

Open your portfolio and pretend you are writing a review for a new online music publication. As you watch Cage's theatrical performance, answer the following questions:

1. **What's the main purpose of this piece?**
2. **What are the parts and their roles in the work? Does the audience have a role?**
3. **Which ideas or sounds are especially smart or creative?**
4. **Who is the audience for this?**

Share your answers with your friends, class and family. Was Cage **demonstrating** a future component of music-making?

ACTIVITY: Kodály to Coldplay

ATL

- Media literacy skills: Comparing, contrasting and drawing connections among (multi)media resources

Using an everyday object like a clock, how would you represent it in sound? Would the sound be electronic, acoustic, or a collection of recorded sounds?

1. **Set a series of limitations for yourself, such as an image of a clock or instrument, or a concept like rhythm.**
2. **Mind-map a series of ideas in your portfolio that would work and rehearse them.**
3. **Record, notate and play through your ideas.**

Assessment opportunities

In this activity you have practised skills that are assessed using Criterion A: Knowing and understanding and Criterion C: Thinking creatively.

EXTENSION

Ensemble performance: *The Persistence of Memory* by Dave Hall

Based on the 1931 painting by Salvador Dalí that represents surrealist art, this percussion ensemble work incorporates many players and a host of expressive effects. The writing for this piece utilises time, **pitch** and tone-colour (timbre) using an incredible amount of percussion instruments. You can listen to the score here:
http://c-alanpublications.com/the-persistence-of-memory



- **Figure 6.29** *The Persistence of Memory (Clocks)* by Salvador Dalí

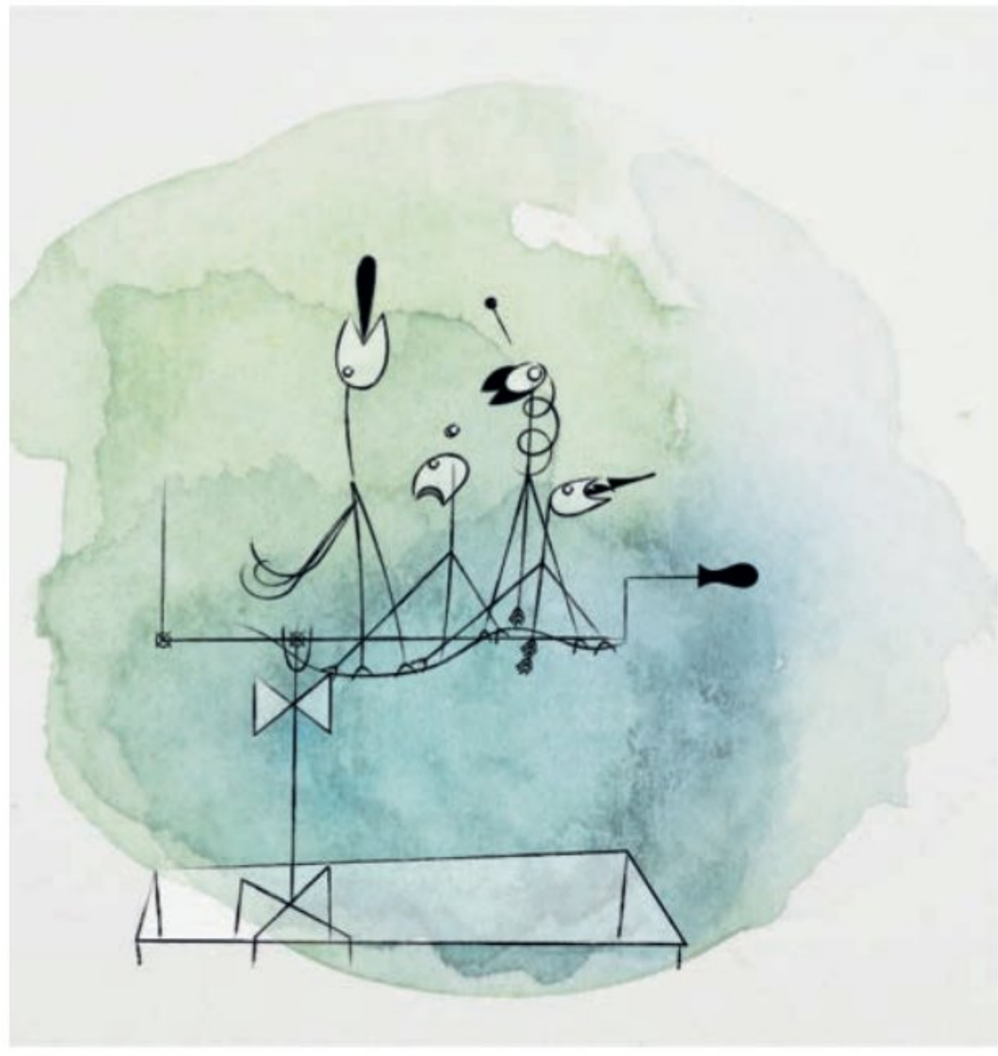
Portfolio presentation

15 second composition 4

Using the application Keynote for MAC, a series of artworks has been animated for your #15secondcreative projects. You can find it in the Teacher's Pack.

Twittering Machine (1922) blends both birds (the natural world) and machinery (industry or metal objects) in a way that existed long before social media began. Your task is to create, record, perform or notate a short 15 second work to accompany this image. Start your process by drawing in your portfolio an outline, much like a sketch or pattern of the music you want to make. Then decide on:

1. **Line**: How will you decide which melodic lines or object-type sounds fit the image?
2. **Rhythm**: How will you use repetition? How is rhythm represented in the image?
3. **Space**: How will you make space? Or build up textures? Does the blue / green colour represent constant sound or silence?



- **Figure 6.30** Keynote recreation of Paul Klee's *Twittering Machine*

You can use music software such as GarageBand, or SoundTrap to present your music. Be adventurous!

ACTIVITY: *Clocks* by Elena Kats-Chernin

ATL

- Communication skills: Using a variety of media to communicate with a range of audiences

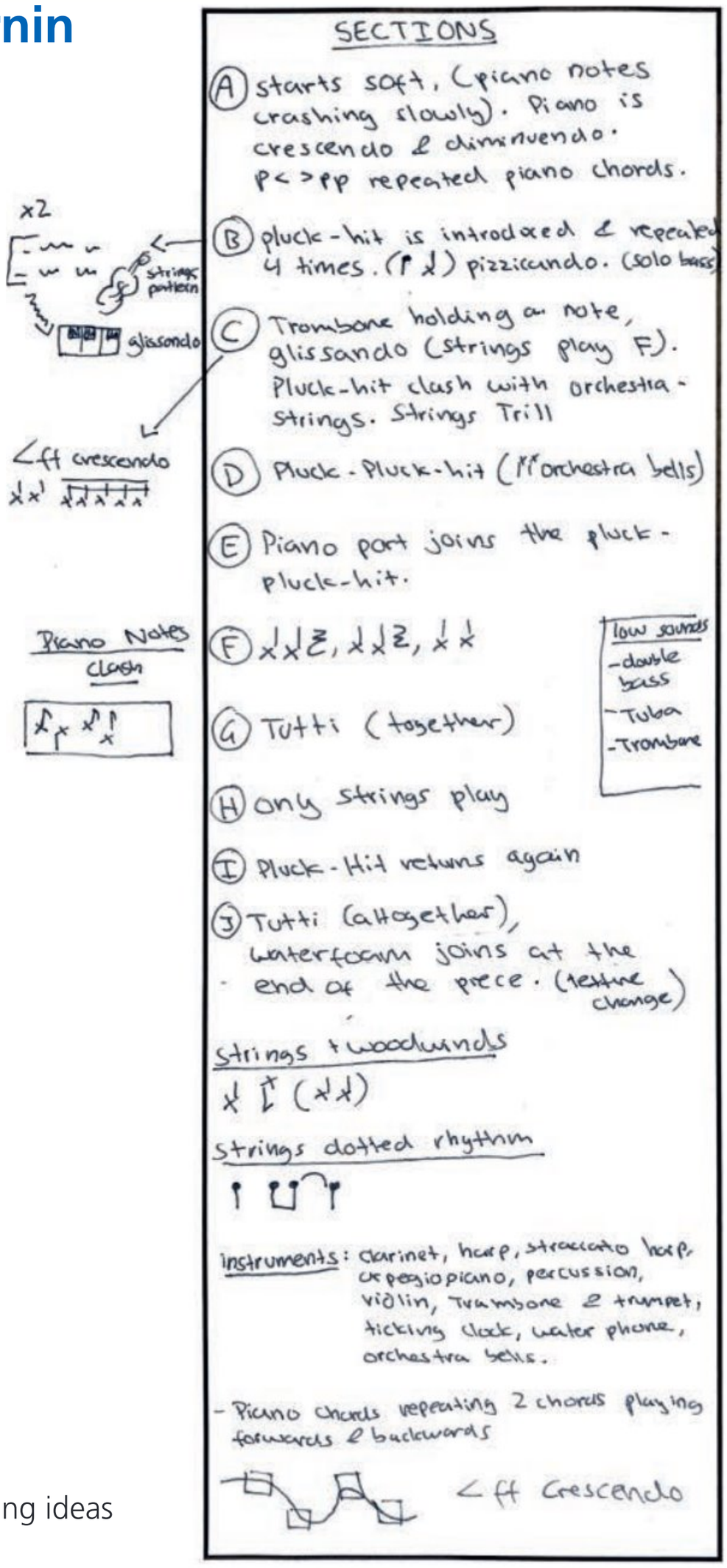
Composer Elena Kats-Chernin (b. 1957) has also **explored** the world of clocks. Her four-movement work *Clocks: for 20 musicians and tape* explores the sound qualities and colours of rhythmic 'ticking'. The double-bass slaps bring to mind a large grandfather clock with a pendulum, while the rhythmic piano, string or woodwind ideas jump in and out of the spaces, repeating and layering themselves.

After listening to the recording of movement 1 on the playlist, your task is to graph or sketch out a structural diagram of the piece. You can think of it like a mind-map, painting or shopping list. Make sure you include images as well as descriptions of what you can hear.

Elena has captured something important in this work, something John Cage was also expressing with *Water Music*. Sound is everywhere and we have the opportunity to be creative with it.

Assessment opportunities

In this activity you have practised skills that are assessed using Criterion A: Knowing and understanding and Criterion B: Developing skills.



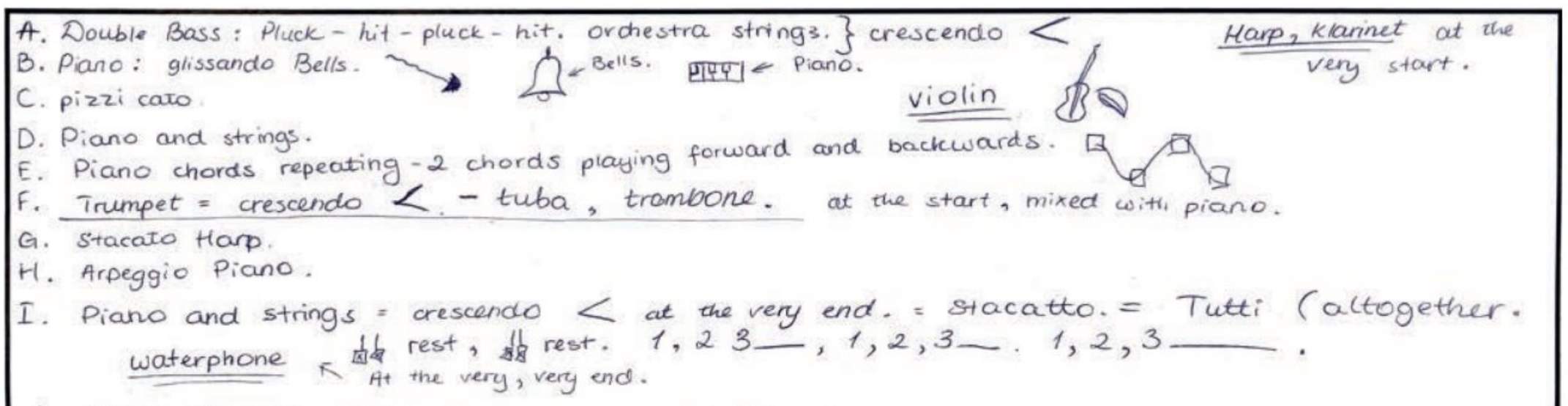


Figure 6.31 Student examples of drawing, sketching and listing ideas from movement 1 of *Clocks*

What is tone-colour or timbre?



■ **Figure 6.32**

COLOUR–SYMBOL–IMAGE

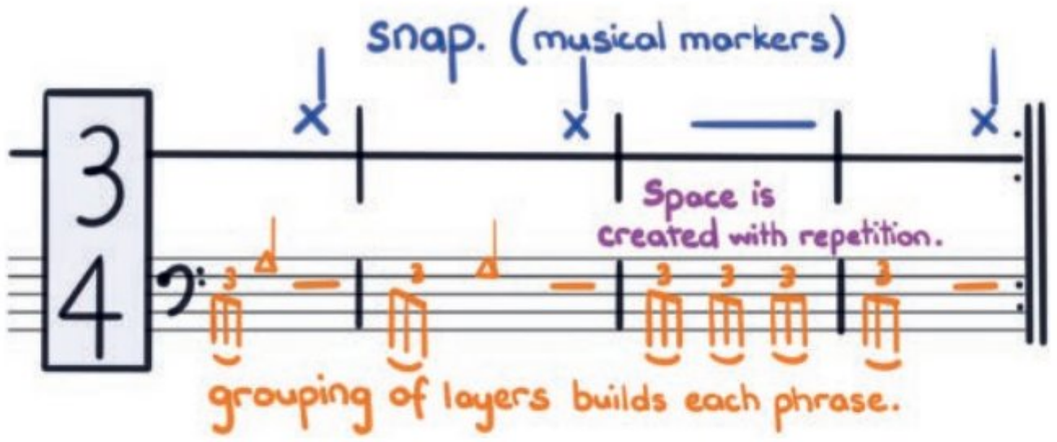
Watch the introduction of the 2003 film *Catch Me If You Can*, made thanks to FilmScoreAnalysis. Pay close attention to the use of colour and silhouette as a main theme grows from a simple rhythmic idea. You can watch it here: **https://youtu.be/LOUmlaHz3WA**

Discuss as a class the use of each shade of colour with the graphic representation of the main phrase in Figure 6.33. **Create** a mind-map of the type of musical elements used with each colour, from blue to yellow, orange to green, red to pink, and how often the main theme is heard.

Use these prompts to discuss in pairs the intent of the composer, John Williams, in structuring his score in this manner.

1 **Choose one colour that you feel best represents or captures the essence of the music**
2 **For another colour, choose a symbol that you feel best represents or captures the essence of the music.**
3 **For one last colour, choose an image that you feel best represents or captures the essence of the music.**

Williams would have chosen each specific instrument because of the *intended colour*. This is what musicians refer to as *tone-colour* or *timbre*.
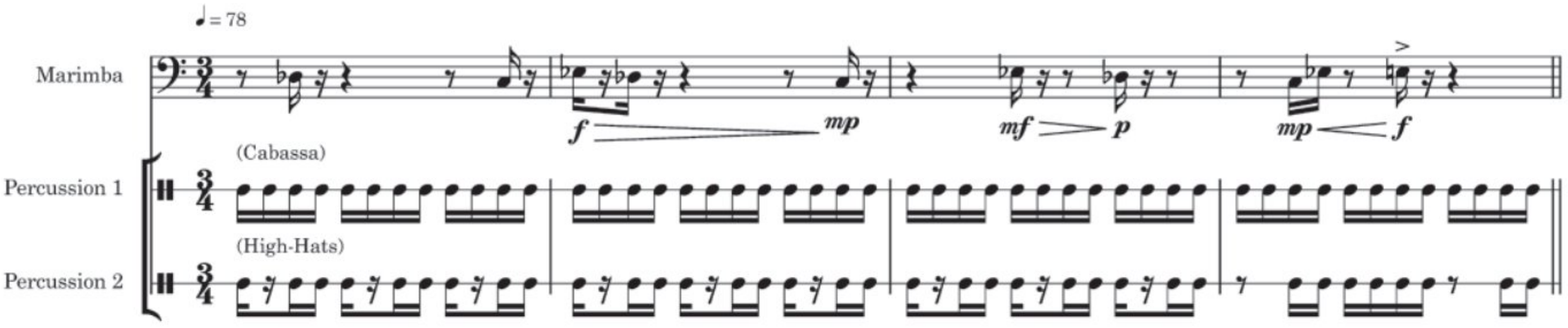


■ **Figure 6.33** Graphic representation of *Catch Me If You Can* by John Williams

LEGENDS AND STORIES

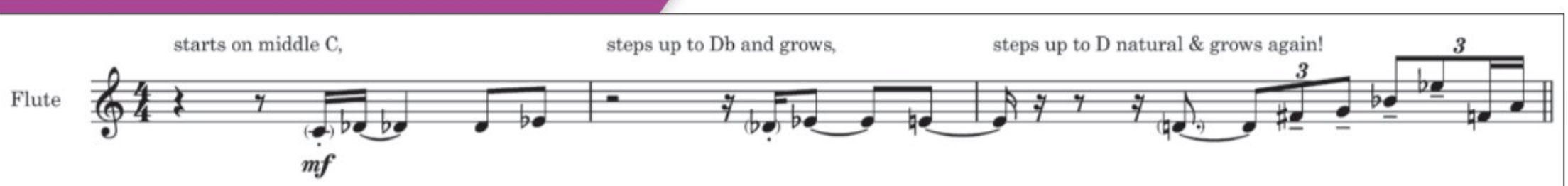
If you have ever heard of the City of Gold, *El Dorado*, you have imagined like the rest of us how amazing it would be actually to find such a place. Yet would such a find be used responsibly? Composer John Adams, in his 1991 work *El Dorado,* writes a two-movement work that looks at two different sides of El Dorado. Like a *diptych*, an object or artwork that has two flat panels attached at a hinge,

Adams presents two views in his work: industry and utopia. Movement 1, 'A Dream of Gold', is, according to Adams' own words, '… a landscape subject to human abuse'.

Adams uses a continual semi-quaver (16th note) pattern in the percussion, cut up in parts, to give the music momentum. The C bass pedal provides the foundation for **complementary** patterns.



■ **Figure 6.34** Transcribed section showing layers of rhythm, mm17–20



■ **Figure 6.35** Transcribed section showing the growth of the flute motif, m44

The first movement also contains a simple melodic motif in the flute, much like a germ of an idea, because it grows and changes as long as the flute is playing.

Movement 2, entitled 'Soledades', is the exact opposite, seeking to communicate a paradise untouched by human hands. To do this, Adams uses an organ-synth chord over a single-note pedal in the harp. You will hear the **syncopation** Adams is creating because he is using a **time signature** of 12/8 with **crotchets** (quarter-notes) in the harp (Figure 6.36).

ACTIVITY: El Dorado

■ ATL

■ Creative thinking skills: Focusing on the process of creating by imitating the work of others

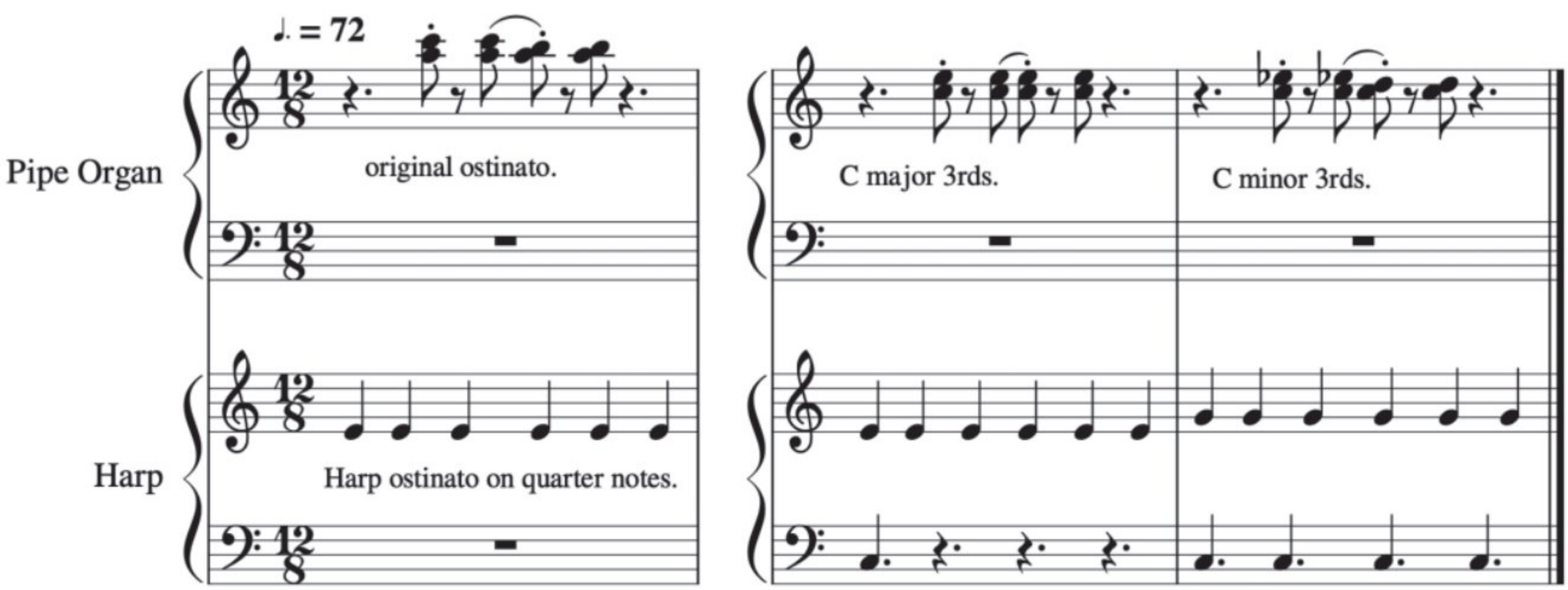
Your mission is to **use** the 12/8 examples below and **create** your own syncopated organ pattern. The harp line has been provided for you; all you need to do is experiment **using** the pattern started by Adams.

Hint

Follow Adams' example and listen to how he repeats different patterns on each line. You may surprise yourself as to how good your creation really sounds!

◆ Assessment opportunities

In this activity you have practised skills that are assessed using Criterion B: Developing skills and Criterion C: Thinking creatively.



■ **Figure 6.36** MuseScore example for ostinatos over 12/8 (one example given in C major with another in C minor)

Is the combination of cultures an innovative method for expression?

GENERATE–SORT–CONNECT–ELABORATE

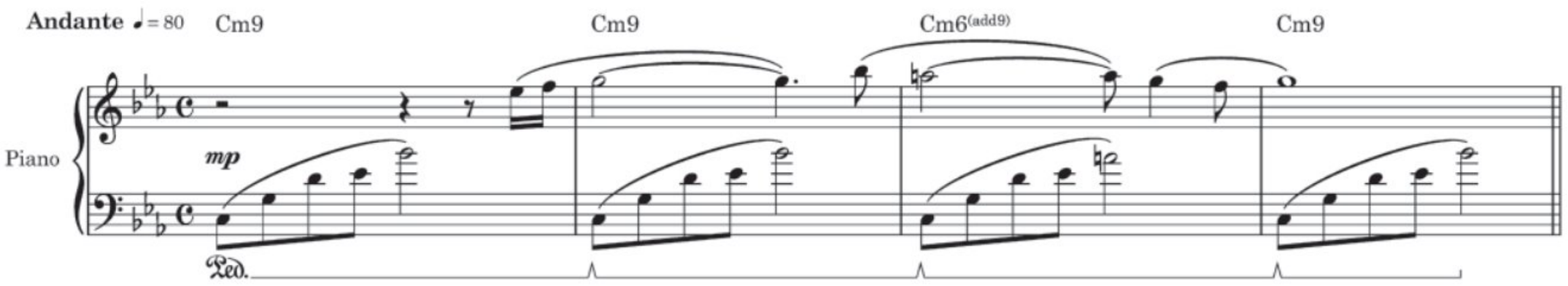
'How Miyazaki Uses Sound In His Movies' (**https://youtu.be/9J_CaBy0atc**) is a clip **outlining** the context behind the composer of this section, Joe Hisaishi. Hisaishi's music has become synonymous with animations from Studio Ghibli. It is highly recommended that you watch the 1984 film *Nausicaä of the Valley of the Wind* and take note of the opening piano theme below, to complete this thinking activity.

The score composed by Hisaishi incorporates orchestral and electronic sound sources, along with a soft piano that colours the world Nausicaä lives in. You can feel the film through its music, as well as its themes on humanity and environmentalism:

"I am a sentimental humanist who likes to translate emotions."

Joe Hisaishi

1. **Generate a list of ideas that come to mind when you think about making music that express the idea of 'connection to the environment'.**
2. **Sort your ideas according to how central or 'outside the box' they are. Place central ideas near the centre and more tangential ideas toward the outside.**
3. **Connect your ideas by drawing connecting lines between ideas that have something in common. Explain and write short sentences on how your ideas are connected.**
4. **Elaborate on any of the ideas you have written so far.**



■ **Figure 6.37** *Nausicaä of the Valley of the Wind*, opening theme

EXTENSION

Ensemble performance: *Bookmarks from Japan* by Julie Giroux

Premiered by the Musashino Academy of Music Wind Ensemble in Japan, 2013, this band ensemble work is based upon six postcards from Japan.

Movement one is based on *Fine Wind, Clear Morning* by Hokusai Katsushika, which is a woodblock sketch from Hokusai's collection *The 35 Views of Mt. Fuji*. This extends to the sixth movement, based on *Hakone Pass* by Hiroshige Ando. Each selection blends melodic scoring with interesting percussion passages. You can listen to the works of Giroux with score here:

www.musicapropria.com/musicpages/bookmarksc.html



■ **Figure 6.38** *Hakone* postcard

ACTIVITY: The Hisaishi Sound

ATL

- Transfer skills: Combining knowledge, understanding and skills to create products or solutions

The films of Studio Ghibli and Hisaishi's scores have painted a host of emotions in each one. The following activities are focused on experimenting with the *Hisaishi sound*. You then get the chance to make some 'Hisaishi sounds' yourself! Make sure you have access to a piano or electronic device with a keyboard to rehearse these different parts.

Extended chords in *The Girl Who Fell from the Sky*

The chords from *Laputa: Castle in the Sky* capture the essence of his extended chords technique. Don't be daunted by the multiple notes; remember, you count upwards through the chord from 1-to-8, and then keep going with 9, 10, 11, 12, 13, adding the extra notes on top.

Move into pairs and play each chord from Figure 6.39. Can you describe the sound?.

Motifs in *Dragon Boy*

The following pattern is heard in the film *Spirited Away*, creating a structure for the other instruments.

1. **On a piano or device, rehearse playing the lines from Figure 6.40.**
2. **With a partner, play the glockenspiel and piano parts together. What do you notice?**
3. **Using the patterns from Figure 6.40, compose a melody on top using C minor as your starting point. Can you and your partner perform it for the class?**

Assessment opportunities

In this activity you have practised skills that are assessed using Criterion B: Developing skills and Criterion D: Responding.

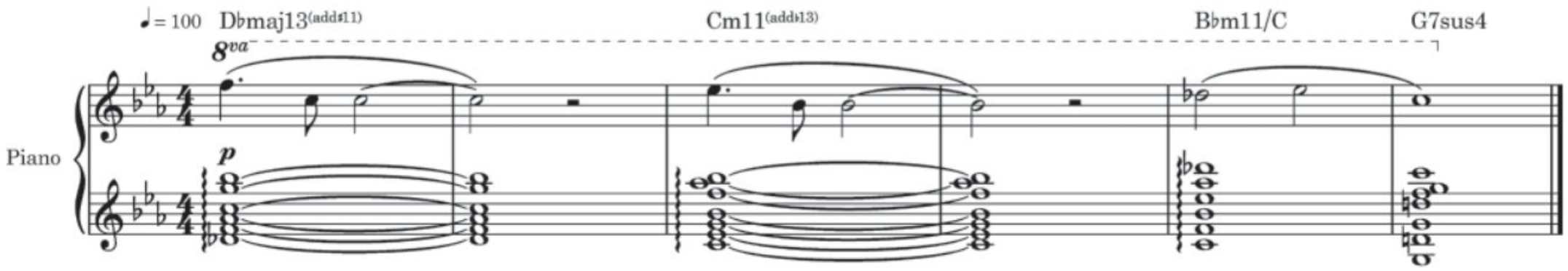


Figure 6.39 The extended chords of Hisaishi offer bright colours and build on our knowledge of chord extensions
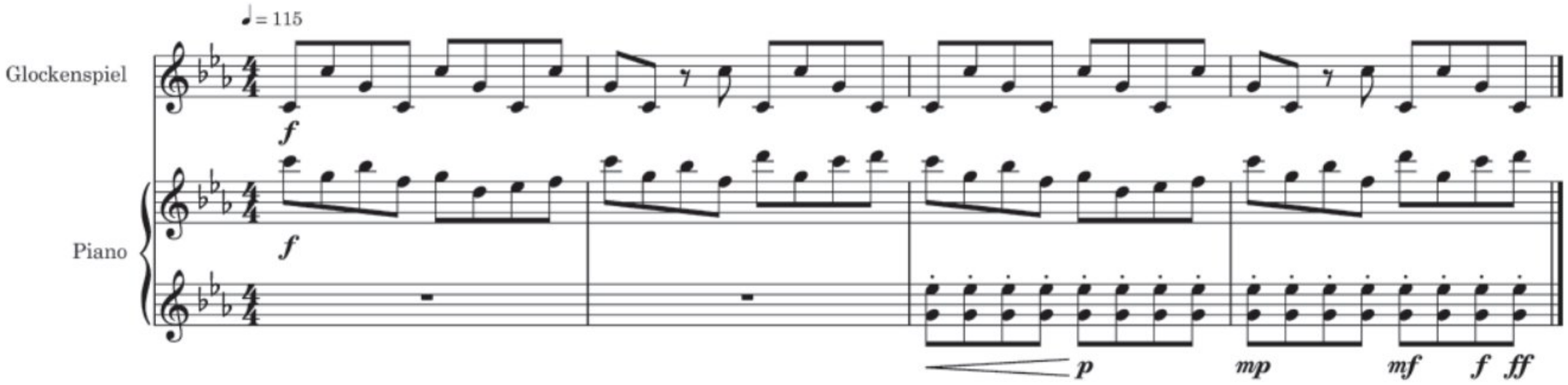


Figure 6.40 Opening motif in C minor with C pedal

Listening strategically: Get an IDEA

William Barton (b. 1981) is known as a composer and virtuoso didgeridoo performer. 'Kalkadunga: Movement 5. Spirit Of Kalkadungu', was written by both **Composer Matthew Hindson (b. 1968) and Barton**.

The fifth movement includes a solo for the didgeridoo and large drums. Using the formula of **IDEA**, focus on specific sections in the track. Aim to describe musical effects from the didgeridoo and how they fit with the rhythms performed on the percussion. Again, graphic scoring and diagrams will improve written descriptions every time.

What is motivic development?



Figure 6.41 Music adds movement with repetition and colour

CRAFTING THE SOUND OF MOVEMENT

Composer and song-writer George Gershwin (1898–1937) was a composer whose works extended across the classical and jazz worlds. In 1928 his **tone poem** for orchestra *An American in Paris*, premiered in New York.

From the very first movement, you are to imagine an American in Paris, walking down the street on a mild sunny morning. The tune is meant to be light, fun and almost like the protagonist is whistling.

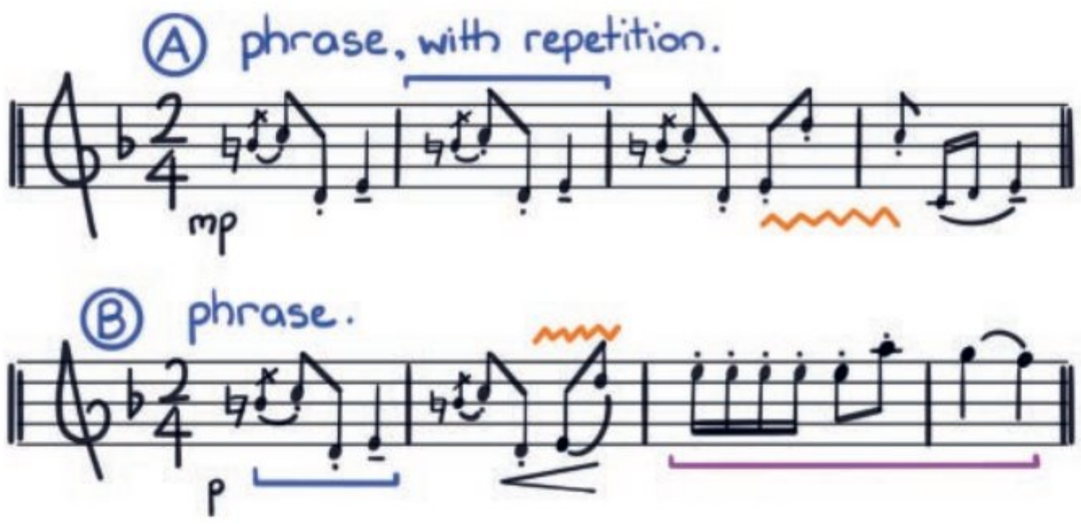


Figure 6.42 'Walking theme' transcribed from the violins m1–8 showing two clear musical phrases based upon the main motif

What we will be investigating is **motivic development**; this gives the work movement, and ultimately connects everything together.

EXTENSION

Ensemble performance: Disasterpeace and dance

We will now look at Disasterpeace's music combined in a multidisciplinary theatre project called *Unfold*: **https://music.disasterpeace.com/track/unfold**.
The track and performance can be viewed on his blog at **http://disasterpeace.com/blog/tag/Mud+Water** and on YouTube. Collaboration with dancers is a unique opportunity that you can also experiment with. It gives you the opportunity to innovate ways of communicating vastly different ideas:

> "… while exploring real human emotions and life experiences."

The score also includes samples from Stravinsky. For more inspiration on movement and **developing** a dance collaboration, check out the Chemical Brothers' 2016 track *Wide Open* with vocalist Beck and dancer Sonoya Mizuno (choreographed by Wayne McGregor): **https://youtu.be/BC2dRkm8ATU**



Figure 6.43 Disasterpeace's *Mud Water* EP. Cover photograph by Jason Lam (www.jlam.com)

ACTIVITY: An American in Paris

ATL

- Creative thinking skills: Creating original works and ideas; using existing works and ideas in new ways

Breaking up measure one of the 'walking theme', let us suppose Gershwin wants to use this motif much like a visual artist uses shades of colour. Each variation will slightly vary the original motif – a technique you have been engaging with throughout the chapter!

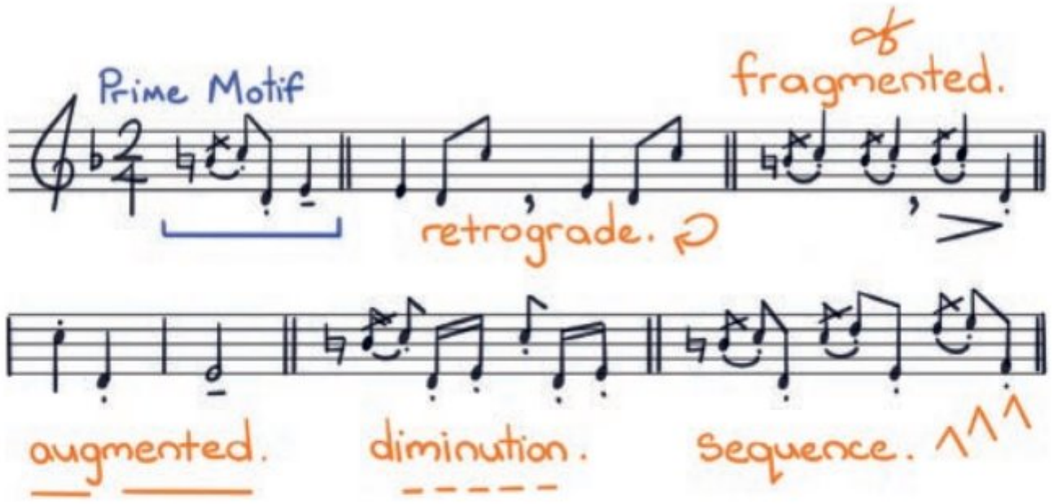


Figure 6.44 Motivic development options for the 'walking' motif measure one

Now it is your turn! **Using** a motif that we will take from the 'walking theme', specifically measures 7–8, write down in your portfolio different versions of that motif. **Use** the technique of motivic development and five labeled options in Figure 6.45.

You can test yourself further using Quizlet.com's online flashcard system at: **https://quizlet.com/143072624/developing-a-motive-flash-cards**

Assessment opportunities

In this activity you have practised skills that are assessed using Criterion A: Knowing and understanding and Criterion B: Developing skills.

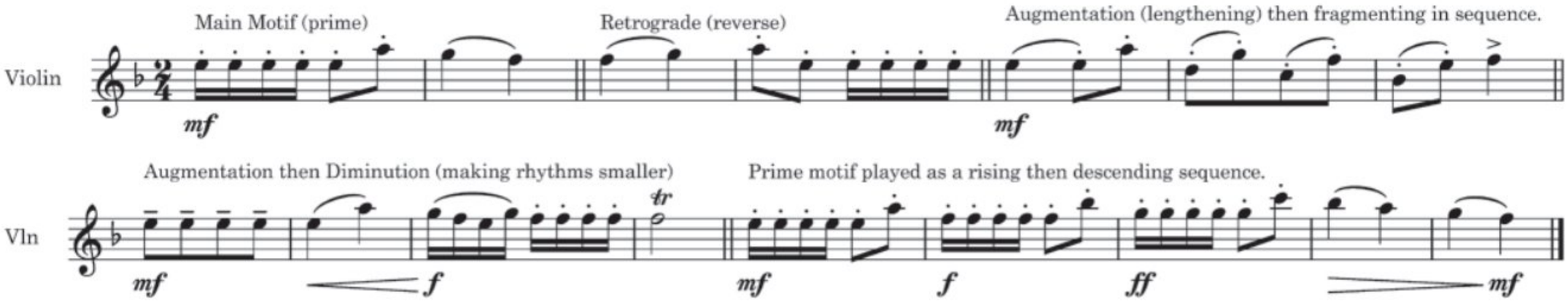


Figure 6.45 Examples of developing motifs from measures 7–8 on the 'walking theme'

THINK–PUZZLE–EXPLORE

Did you know that there is a combination of music, visual storytelling and magic in Japanese culture? Classic Edo magic, or *Tezuma*, is **demonstrated** here by artist Kohtaro Fujiyama as part of his TEDx Talk in 2013: **https://youtu.be/qu8Dla5rASU**. Watch the performance that would cause Kandinsky to exclaim 'this is a Gesamtkunstwerk!'

What Fujiyama achieves is a perfect blend of instrumental performance, colour and storytelling. In your portfolio, brainstorm several thoughts on the following questions:

1. **What do you think you know about this performance or music?**
2. **What questions or puzzles do you have?**
3. **How can you explore this combination of theatre and music further?**

What is a theme?



■ **Figure 6.46** Space and time

COLLABORATION BRINGS CREATIVITY

This section of Chapter 6 will be devoted to thematic writing for piano. There are many musicians and composers who could be mentioned, but the musical writing of Murray Gold for the TV series *Dr Who* needs a closer look. Make sure you have a instrument nearby, notation software, GarageBand or SoundTrap for recording ideas, as well as the listening playlist.

ACTIVITY: Dr Who and Murray Gold

■ ATL

■ Creative thinking skills: Applying existing knowledge to generate new ideas, products or processes
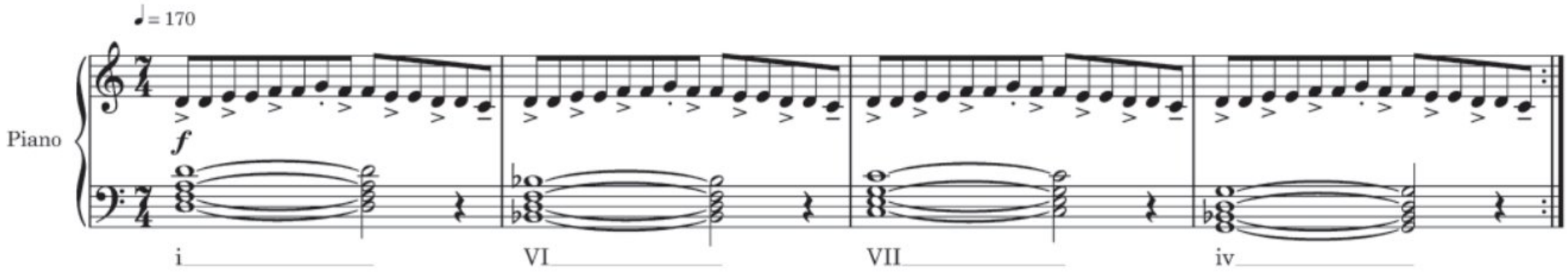
1 ***I am the Doctor***

This time-travelling hero needed a theme, and Gold decided to use the time signature of 7/4 with the Dorian mode (1 2 b3 4 5 6 b7 8). By repeating a scale-like motif called a tetrachord and changing the bass notes to a i / VI / VII / iv progression, the theme is complete. Try playing the theme in steady 8th notes.

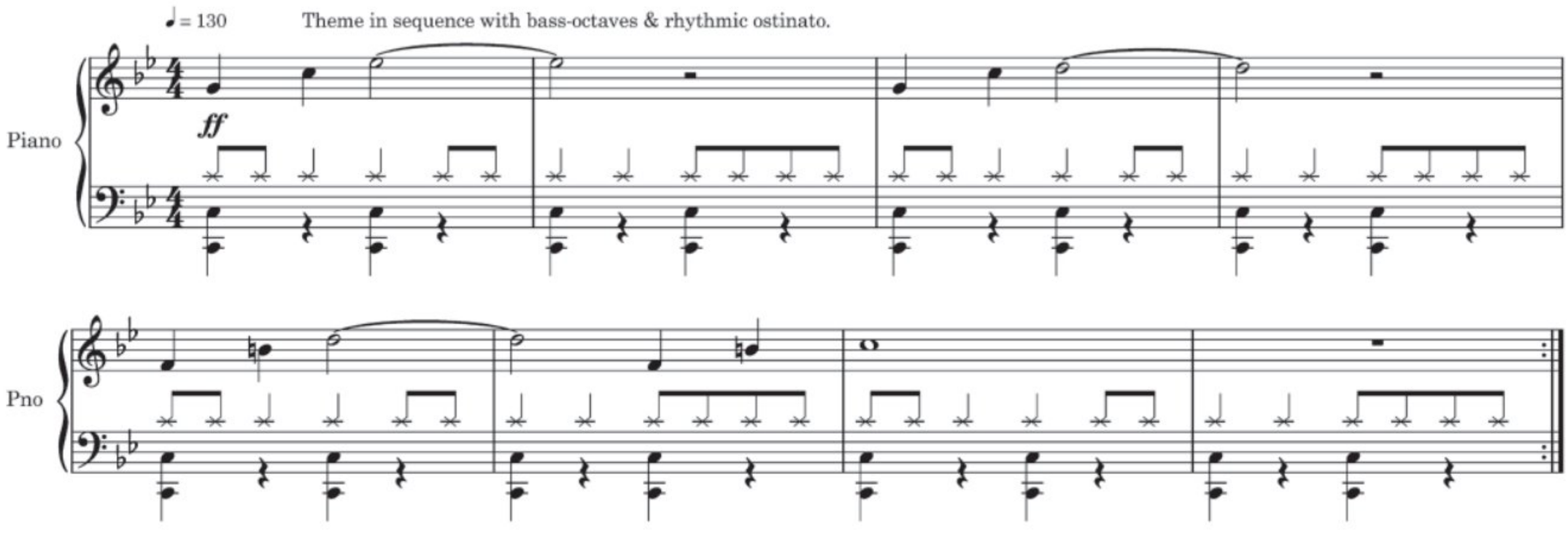
2 ***The Dark and Endless Dalek Night***

What do you do to make a piano sound like mad-evil robots? Add an ostinato in the bass in octaves, and use a repeated motif on top. Then using the idea of *space*, create a rising arpeggio melody in a sequence of longer rhythms.

Try performing this theme in groups on instruments and devices.



■ **Figure 6.47** *I am the Doctor* theme with repeated 1-measure phrase over 4 chords

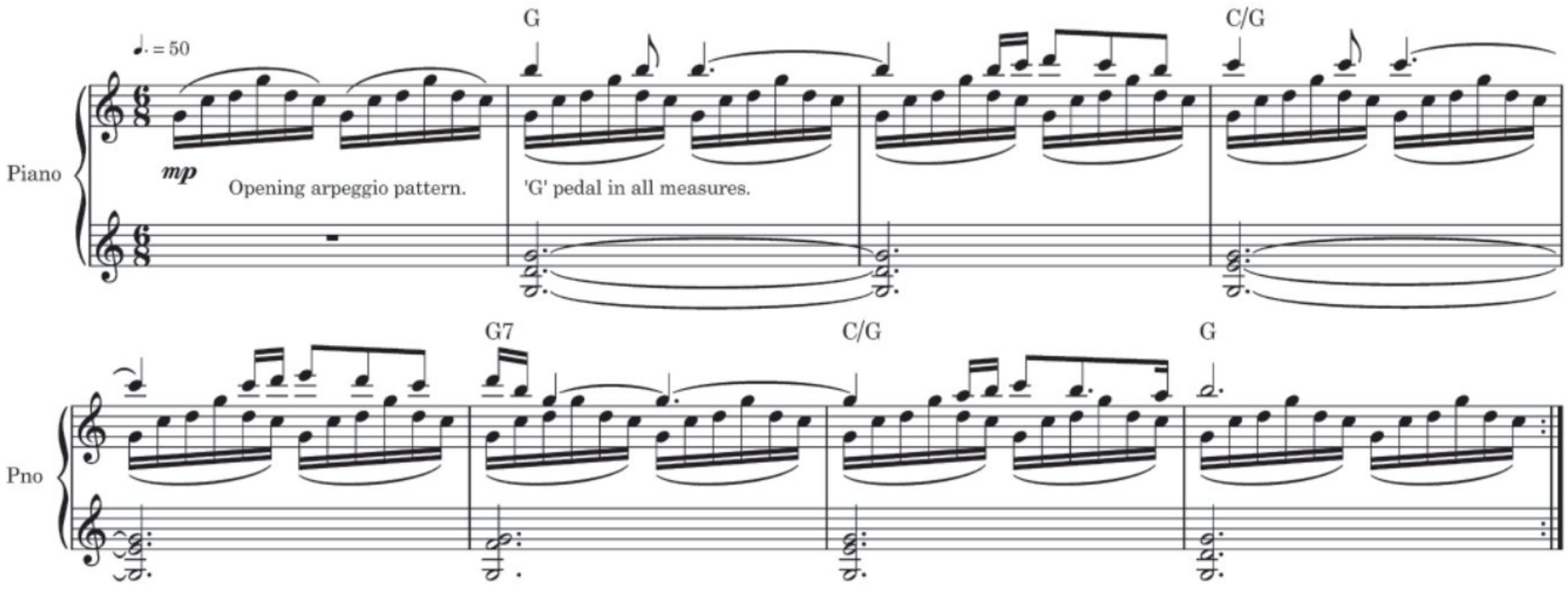


■ **Figure 6.48** 'Dalek' ostinato and arpeggio theme

3 *Clara*
This theme is set with a Gsus4 arpeggio in quavers (8ths), with the melody an octave above. This TV-scoring cliché works beautifully. Gold's *Clara* melody repeats in a sequence with **a** different rhythm notes from the arpeggio and **b** adds a varied ending just like the other melodies we have studied.
Take turns playing the Gsus4 arpeggio and sing the melody on top.

4 *The Sad Man with a Box*
Most themes we have studied seem to follow a pattern of ostinato, with different rhythmic melodies on top. This example is different, as the bass notes are sustained and the melody uses chromatic steps to continue the same shape of the first phrase, while adding a little rhythmic variation with the dotted quarter note.
In MuseScore or Symphony Pro, could you repeat these bass notes and add your own 4-measure answer to this melody? All you need to do is copy / paste the pattern up or down a step.

5 *The Shepherd's Boy*
This track refers to the Brothers Grimm story *The Shepherd Boy*, where a bird wears away at a diamond mountain with his beak over centuries through perseverance. The music is in 6/8, and the melody again fits into the spaces left by the waltz-like accompaniment in A minor.
In groups play or program the chord progression with a 6/8 time signature. A Aeolian mode, improvise your own melody to this progression. It will work like magic over this chord progression!



■ **Figure 6.49** *Clara* theme in three layers of a Gsus4 arpeggio, melody and pedal on G

ACTIVITY: Carnival of the Animals

■ ATL

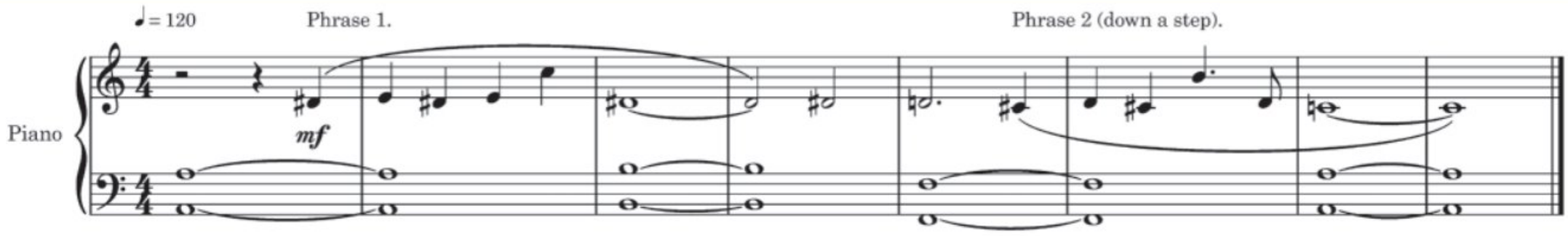
■ Creative thinking skills: Focusing on the process of creating by imitating the work of others

The Carnival of the Animals from 1886 is a musical suite of 14 movements written by the French Romantic composer Camille Saint-Saëns (1835–1921). Each animal within the work is given a particular musical 'character'. The 'Aquarium', for example, has even been used in film and video games.

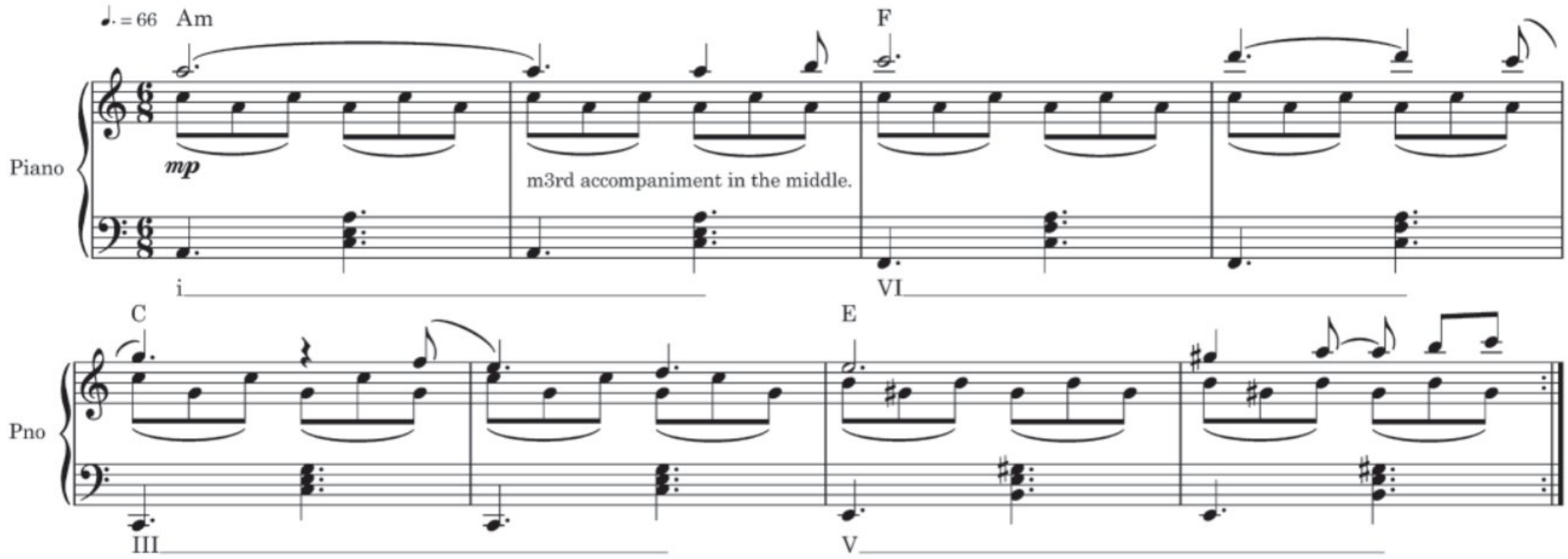
However, where is the shark theme? Or jellyfish? Or electric eel? **Using** the process of Murray Gold or the arpeggios of Camille Saint-Saëns, write your own theme for a dangerous sea creature. You can notate it, perform it or **use** software to combine any of the elements above.

◆ Assessment opportunities

In this activity you have practised skills that are assessed using Criterion C: Thinking creatively and Criterion D: Responding.



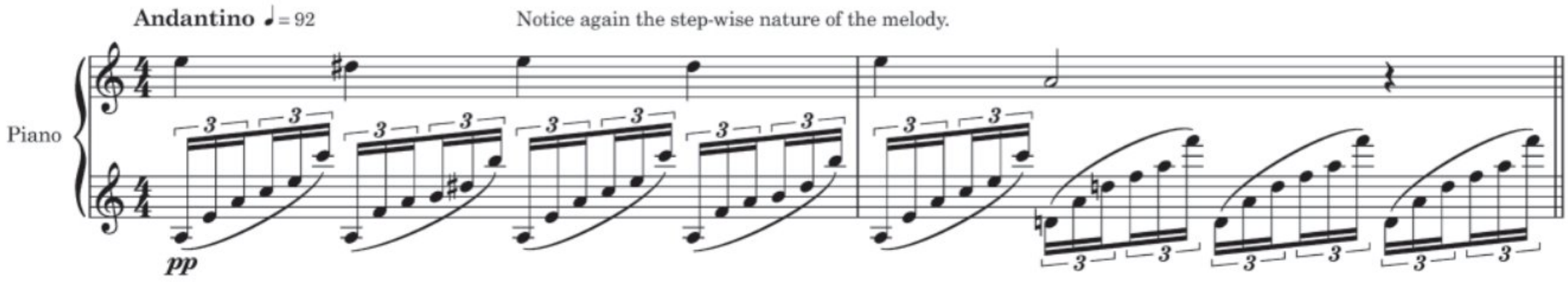
■ **Figure 6.50** Excellent theme-writing by Murray Gold with his overlapping phrases and repeated lines



■ **Figure 6.51** Top melody with inside ostinato and chord progression in A minor

◆ Assessment opportunities

In this activity you have practised skills that are assessed using Criterion A: Knowing and understanding, Criterion B: Developing skills and Criterion C: Thinking creatively.



■ **Figure 6.52** 'Aquarium' melody and left-hand ostinato in triplets

Do artists need to borrow from the past to create new ideas?





■ **Figure 6.53** Ideas for presenting musical ideas

Reflection

In this chapter we have *discussed*, *analysed*, *compared* and *contrasted* multiple avenues for our ability to 'hear' images. Additionally, much of the music we listen to has been created with the same elements that visual artists work with. By *explaining* the connection between lines and motifs, the rhythm of shapes and how space is created with chords and colours, we can now *justify* our own choices when we make music. Furthermore, *innovation* can simply mean we approach a scene or project with a specific structure in mind, drawing on works we have *explored*, to find new ways of expressing ourselves.

By thinking through the process of interpreting different symbols in art or music, you should be able to start distinguishing between styles and forms with understanding.

SOME SUMMATIVE OPTIONS TO TRY

Use these ideas to apply and extend your learning from this chapter. These problems can be assessed using any of the strands suggested above the summative activities. The presentation and portfolio requirements are given after the description.

THIS TASK CAN BE USED TO EVALUATE YOUR LEARNING IN CRITERION A AND CRITERION D (ALL STRANDS).

SUMMATIVE 1

Combining all the musical ideas connected with composing to images, **develop** a musical presentation that focuses on **a** your own choice of artwork (Renaissance, Modern to Pixel-art), **b** your own composed material for that artwork (motifs to ostinatos), and **c** any choices you make in determining the shapes, colours and lines used. The focus is on experimenting, recording and notating sounds.

Presentation and portfolio

Curate a series of composition sketches, and live performances, into slides or video for a final presentation (citated and labelled clearly). The goal is to communicate to an audience how you have approached composing, playing, and innovating sounds for your chosen image.

THIS TASK CAN BE USED TO EVALUATE YOUR LEARNING IN CRITERION B AND CRITERION C (ALL STRANDS).

SUMMATIVE 2

This chapter has outlined musical devices that identify with movement (from rhythm to texture and harmony) and characters (fictional and fantastic). But it has also shown that musical devices can be connected through personal and cultural expressions, often using the same techniques in variable ways. Compose a work that communicates movement or a character that can be performed live.

Hint

Finding a puzzle set of Kandinsky's could be a great way to structure your planning.

Presentation and portfolio

Your music portfolio should include sketched ideas in notation, reflections on works you've listened to and performed phrases evaluated by peers, ready for a live performance (notated or recorded). Additionally, you could team up with, or reference, how a dancer could be connected to your creation when it is presented.

Portfolio presentation

Documenting and sharing

Keeping in line with all your activities, ideas and explorations, use the concepts discussed in this chapter to play more. Having an instrument in your hand and testing out musical ideas is the way you improve. Listening to diverse works, especially pieces that combine theatre, dance, magic or visual art, will always inspire you. Visit the opera, take part in a musical. Being able to communicate a melody or rhythm shows you have a musical vocabulary that can do more than understand music; you can make it up!

Use this table to reflect on your own learning in this chapter.

Questions we asked	Answers we found	Any further questions now?
Factual: What is a theme? What is a score cue? What is motivic developmentç? What is tone-colour or timbre?		
Conceptual: How can we see and hear colour? How can scales, modes or rhythms communicate feelings? How do chords evoke emotion? In what ways do artists create worlds of sound? How can ordinary objects be turned into sound?		
Debatable: Is the combination of cultures an innovative method for expression? Do artists need to borrow from the past to create new ideas?		

Approaches to learning you used in this chapter:	Description – what new skills did you learn?	How well did you master the skills?			
		Novice	Learner	Practitioner	Expert
Communication skills					
Reflection skills					
Media literacy skills					
Creative thinking skills					
Transfer skills					

Learner profile attribute	Reflect on the importance of communication for your learning in this chapter.
Communicators	

7 Can gaming change the way we play?

Examining the **worlds**, characters and design of games illustrates how music **communicates** the intent of the story to the **audience**.



■ **Figure 7.1**

CONSIDER THESE QUESTIONS:

Factual: What is a game score? What is sound design? What is ragtime? What is a *leitmotif*?

Conceptual: How does game play connect to the idea of making art? How does a palette of sound communicate meaning to an audience? How can art music be turned into game music? When are game scores more than just loops?

Debatable: Are game scores the last bastion of good melody-writing? Is gaming good for creativity? To what extent does a leitmotif communicate the storyline?

Now **share and compare** your thoughts and ideas with your partner, or with the whole class.

IN THIS CHAPTER, WE WILL…

- **Find out** how gameplay can focus our creativity and imaginative ideas into works of art or music.
- **Explore** the processes used by artists and musicians when they create new worlds of sound, manipulating the building blocks of music to communicate stories to an audience.
- **Take action** in demonstrating the type of gameplay that can bring anyone together to collaborate, problem-solve and work together towards a common goal. Students will develop a portfolio of music that will place them in the role of composer, sound designer and collaborator.

These Approaches to Learning (ATL) skills will be useful…

- Collaboration skills
- Organisation skills
- Media literacy skills
- Creative thinking skills

Assessment opportunities in this chapter:

- Criterion A: Knowing and understanding
- Criterion B: Developing skills
- Criterion C: Thinking creatively
- Criterion D: Responding

Links to: Physical Education; Mathematics; Language

In Physical Education, games are used to instruct skills, develop communication and collaboration as well as set goals. Mathematics can also be used as a means of connecting formulae and binary code to writing game scores, including computational thinking, whereas Languages can connect on plots, character development and storytelling within game-play. These varied subjects connect through this chapter's summative options.

We will reflect on this learner profile attribute…

- Balanced: We understand the importance of balancing different aspects of our lives – intellectual, physical and emotional – to achieve well-being for ourselves and others. We recognise our interdependence with other people and with the world in which we live.

Prior knowledge

This chapter works on the premise of including all levels of learners. You will find it useful to know:

- how to play and work with scales, modes, chords, bass lines, riffs or ostinatos
- how to play and identify rhythms and structures aurally, from notation and in performance
- how to work collaboratively to express musical ideas with body percussion, voice, instruments and new forms of technology
- what working within an ensemble means for balance and intonation, but also communication and expression
- ways of analysing music using pitch, duration, texture, structure, tone-colour, dynamics and expressive techniques to document the fingerprints of a style or composer
- how to approach rehearsing, experimenting and presenting musical ideas from research and analytical listening.

Examples, links and referenced materials will guide you further.

KEY WORDS

ostinato
modes
chord extensions
monophonic
homophonic
leitmotif
orchestration
diatonic and chromatic
loop
sting
transition
parallel and contrary motion
8bit
subdivision

THINK–PAIR–SHARE

We will be investigating music from 8-bit to full orchestra, however in this activity we will be **exploring** the effect gameplay has on us when we engage in the activity of *flow*. Flow is a state in which '… people become so involved in what they are doing that the activity becomes spontaneous, almost automatic,' according to psychologist Mihaly Csikszentmihalyi. When you learn to play an instrument, listen to music, perform on stage, **create** artworks or play games, do you get lost in the moment?

Think about this for a moment and try to remember when this may have happened to you.

Pair with a partner and **share** with them your moment of 'flow'. Are your stories similar? Remember this concept, as it is an action that can immerse us in something truly creative.



Figure 7.2 Helm synth logo. We will explore sounds with this free synth in this chapter.

Game score mission

Contre Jour

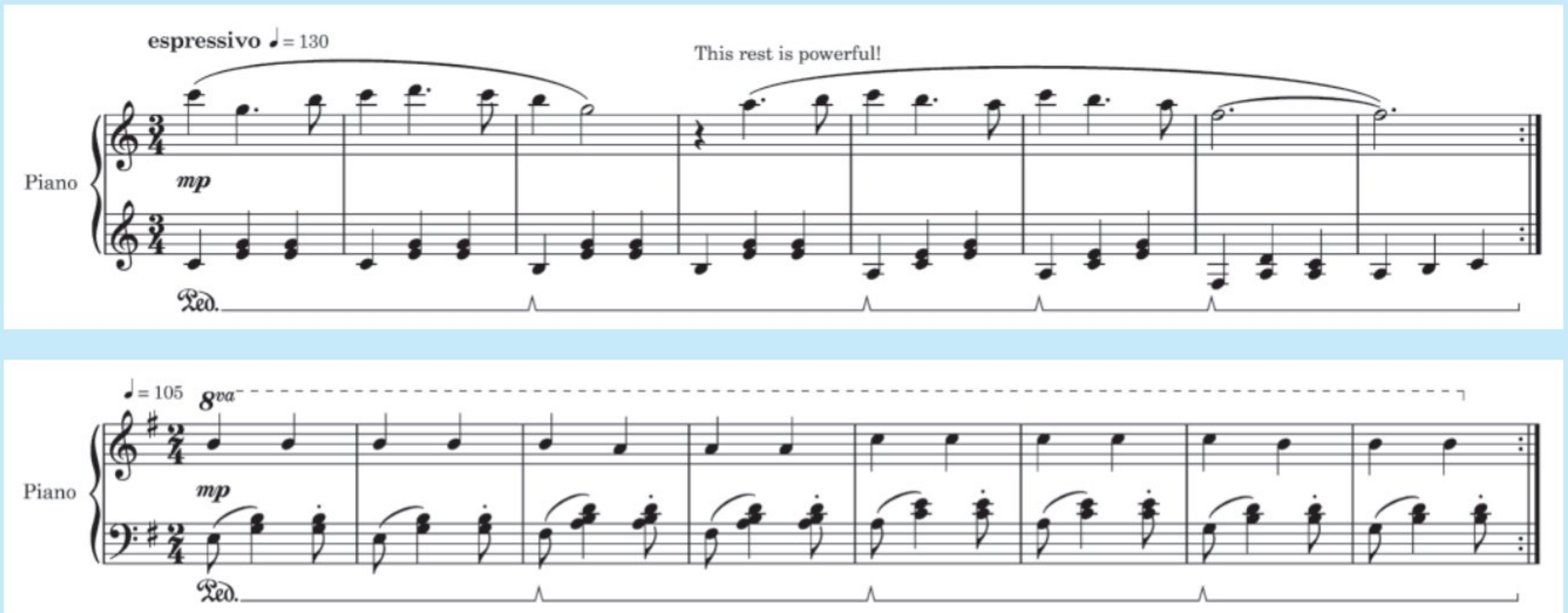
The purpose of each of these missions will be to focus on the creative process of composing for games; whether it is creating music that guides the audience along a path, or music that adapts depending on the player's choice. To start your inquiry, listen to the beautiful score by David Ari Leon to the puzzle platformer *Contre Jour* on Soundcloud at **https://soundcloud.com/davidleon-3/sets/contre-jour-soundtrack**

The score uses only a piano, and superbly transfers the learning of the previous two chapters of this book into the tracks *Les Monstres* and *La Nuit*. Leon's approach combines repeating notes into a single line, octave **intervals**, **syncopation**, rhythms that fill the space and **chord progressions** that provide movement.

Start by singing the melody below while your teacher plays the **chords** in a waltz pattern. What do you notice about the rest directly before the melody begins? What does this do to the melody?



■ **Figure 7.4** *Contre Jour*'s protagonist



■ **Figure 7.3** *Les Monstres* waltz-like rhythm and syncopated line followed by *Les Nuit* with an illusion of 3/4

What is a game score?



■ **Figure 7.5** 'Shovel Knight' gameplay

MUSICAL LOOPS AND CHALLENGES

SEE–THINK–WONDER

TED Talk 'Gaming Can Make A Better World' (**https://youtu.be/dE1DuBesGYM**) from 2010 is a powerful reminder of the collective imagination we have that can solve the world's problems. Speaker Jane McGonigal **outlines** in her presentation that gaming can unite people from all over the world to solve problems with the tools they bring to that game, and they work together to achieve an *epic win*.

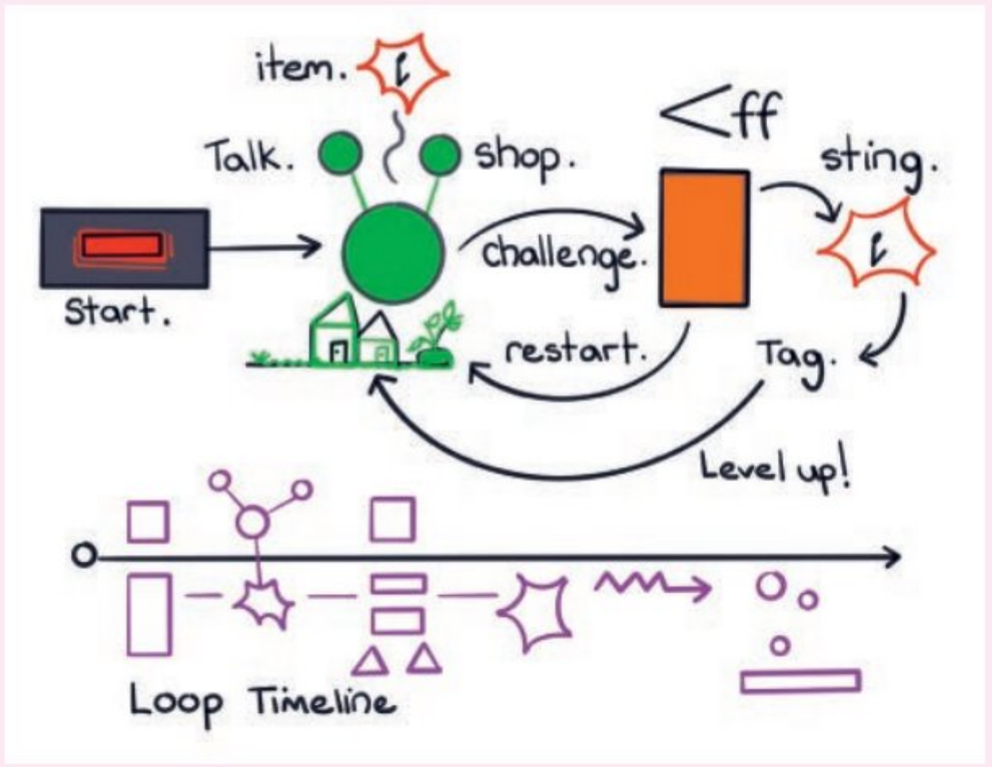
If you have ever played a game, would you agree with this statement? Discuss with a partner why or why not.

Now add to this discussion the power of music. When the team works together to solve a problem, triumphant music is heard. When there is a loss of health or a setback in the game, melancholic music is heard. How would these sounds motivate the players' progress in a game? In pairs, open up your portfolio and mind-map your ideas.

1 **What do you think about gaming as problem-solving?**
2 **What does it make you wonder about the role music plays in this process?**

Music exploration: What is a game score?

Games are vehicles for storytelling. With each and every challenge, a game score is music that reflects a player's choices, the aesthetic of the game and the action required to complete the mission. This means that there needs to be a structured approach to writing such music:



■ **Figure 7.6** Graphic map of a game-design document

Following Figure 7.6, you can imagine having started a video game with its opening theme playing over a setup menu. You press 'start' and now you are in that 'wandering through the village' section, which could take 5 to 50 minutes. That is why there is a musical **loop** prepared of different layers and sounds. If a challenge pops up to give the player a special move, the *transition* music will trigger and lead into the 'challenge' *loop* for a set time. Finally, once the challenge has been completed a **tag** section ends the level and moves into the next section.

A game score seeks to immerse its players in a story, while providing structural unity in the music itself. This unity is very important and centres around how the music is **orchestrated**.

Make a mind-map of video games that you feel have incredible musical scores written for them. At the centre of the map list the games, then branching out of the list describe each game's music with brief statements such as 'it has a great melody' or 'the **rhythm** is energetic and syncopated' or 'the soft eerie sounds fit the dark colour of the game'.

ACTIVITY: Sonic's sound

ATL

- Media literacy skills: Interacting with media to use and create ideas and information

'Sonic The Hedgehog' was first released in 1991 to home SEGA consoles; and now you can play it on your phone! Composer Masato Nakamura, bassist and songwriter of the J-Pop band Dreams Come True, was limited to using only four sounds at the same time when he began scoring for the game. This limitation actually gave him the chance to apply his musical knowledge to **creating** truly melodic themes for each level:

> *"Sonic Team gave me some keywords, which were stage names. The volcano stage, the green stage, and so forth… thinking back on it now, I was so lucky, because I had freedom and I could be a creator, or songwriter… That's the reason why I was able to make such melodic tunes and unusual rhythm patterns."*

In 'Green Hill Zone', Nakamura starts with intervals of 3rds from the F **Lydian mode** for the start, then he uses the last four notes of C major (known as a **tetrachord**) to build a series of patterns that are used throughout the theme.

1. **Test out the rising 3rd intervals on your instrument – this is the iconic 'Sonic' opening sound.**
2. **Now play through the C-pedal and Lydian mode on a keyboard or guitar. This pattern creates a floating effect that helped Nakamura establish the world of 'Sonic'.**

Game score mission

Shovel Knight

Shovel Knight is a scrolling platform game developed by Yacht Club Games in 2014 via crowdfunding on Kickstarter. It is an 8-bit gaming adventure that will have you hooked by its musical themes and storytelling. But what is 8-bit in music? Here it is referring to the synthesising of sound within a computer processor. In computer language, it is the amount of information available to represent graphics or audio. For example, if we hear a pure sound wave from an instrument, a computer working with 8-bit memory restrictions would render this wave form as best as it can into the square-like shape as seen in Figure 7.8 below.

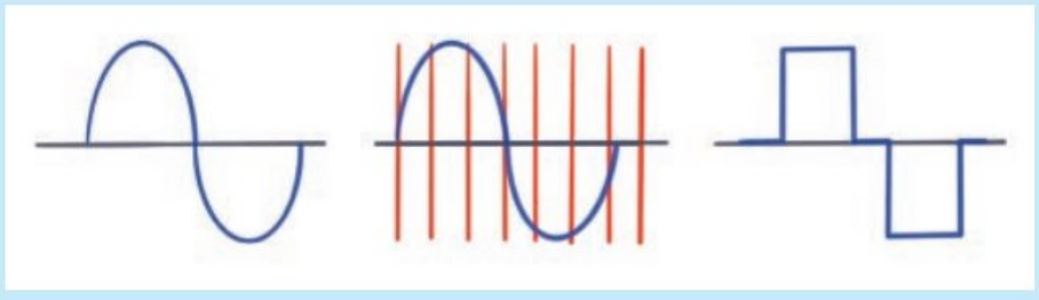


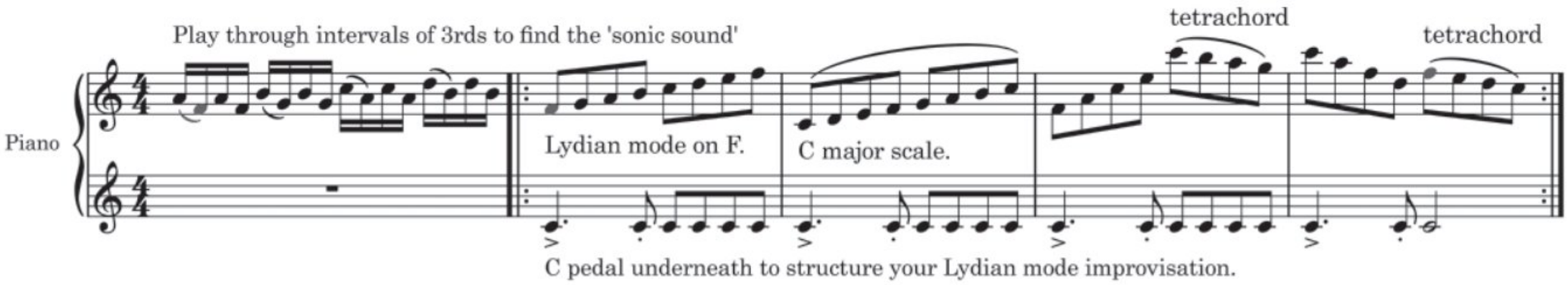
Figure 7.8 Audio sine wave, 8-bit conversion

What 'Shovel Knight' did was to apply the 8-bit approach and combine it with melodic themes that fit each stage of the game. You can even collect pieces of music for a wandering musician (the bard) to play inside the game itself. Take a look at the two melodies of *Main Theme* and *In the Halls of The Usurper* written by Jake Kaufman:

1. Sing them using **solfeggio** or note names. They are both very easy to remember, and use either the **Dorian** (1 2 b3 4 5 6 b7 8) or **Aeolian** (1 2 b3 4 5 b6 b7 8) **modes** in repeated phrases called **sequences**.
2. The rhythm of the bass is also intended to drive home the idea of heroism and energy, with the repeated **quaver** + semi-quaver (8ths and 16ths) patterns.
3. Finally, the use of a descending perfect 4th or 5th interval in both tunes helps communicate the heroism of the character.
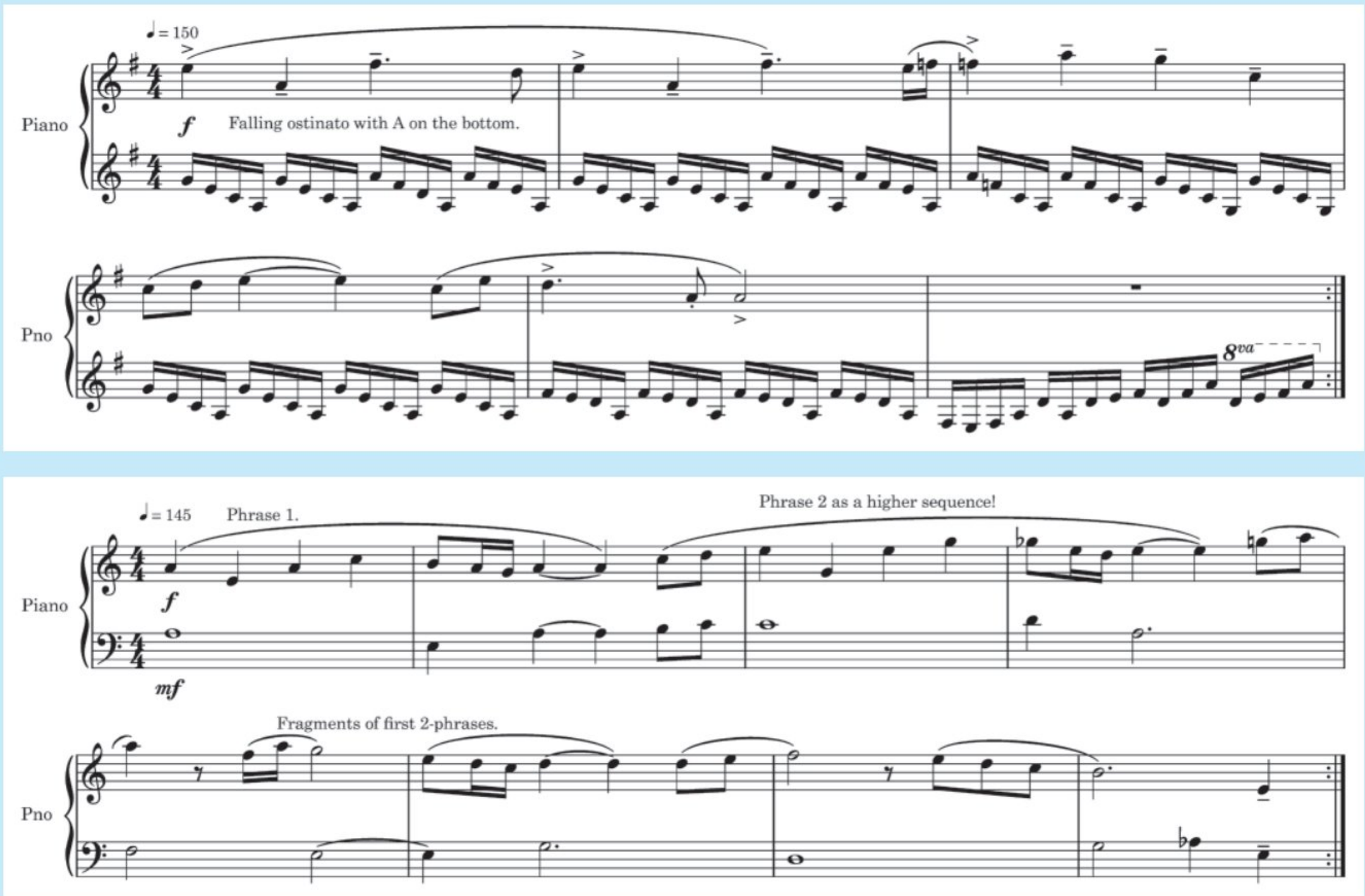


Figure 7.9 *Shovel Knight* gameplay



■ **Figure 7.7** Listen to 'Green Hill Zone' and experiment playing with 3rds and the Lydian mode. Can you work out the 'Sonic Sound'?

Assessment opportunities

In this activity you have practised skills that are assessed using Criterion A: Knowing and understanding and Criterion B: Developing skills.



■ **Figure 7.10** *Main Theme* and *In the Halls of The Usurper* by Jake Kaufman

What is sound design?





■ **Figure 7.11**

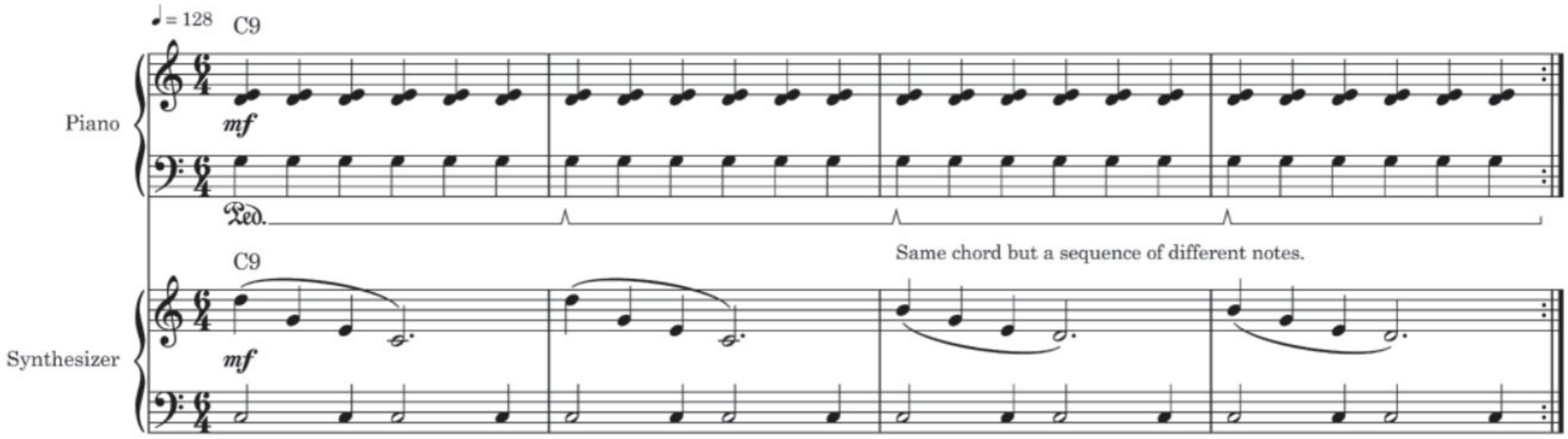
Portfolio presentation

‘Fez’ and 8-bit harmony

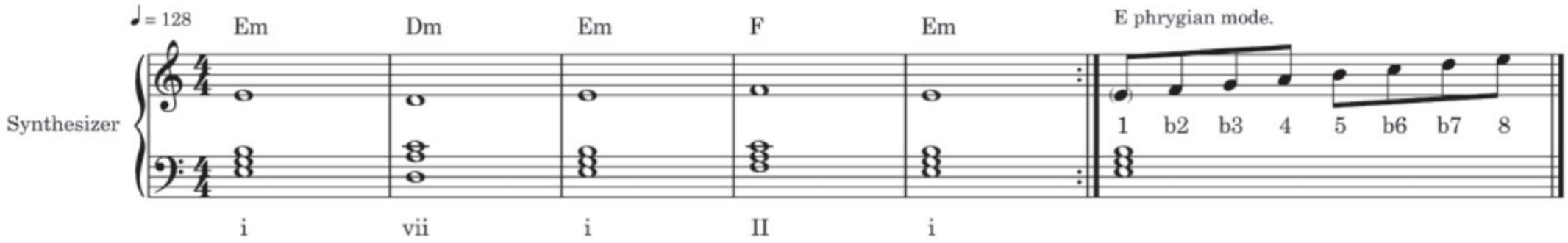
The game ‘Fez’ (2012) is a beautiful world of colour and three-dimensional puzzles. You play as a little character called Gomez in an immersive world, with music composed by Rich Vreeland (Disasterpeace).

Take the track ‘Compass’, with the electronic effects and synthesised 8-bit sounds; it is one chord, C add9. If you remember, this means the **triad** of C major, and you keep counting up the **scale** to add the 9th note, a higher D.

Artists approach game scoring as a combination of musical elements and sound design. At any given time, the artist is making decisions on which sounds to layer, add effects to or change. Software tools like GarageBand or Helm now provide us with unlimited sound-creating tools. Listen to the track ‘Pressure’ from ‘Fez’ and you will hear this in action again. The chord progression is based on E minor (i), D minor (vii), E minor (i), F major (II), E minor again. But what you hear is the **tone-colour** and added effects applied to these chords with the E **Phrygian mode** (1 b2 b3 4 5 b6 b7 8).



■ **Figure 7.12** ‘Compass’ by Disasterpeace
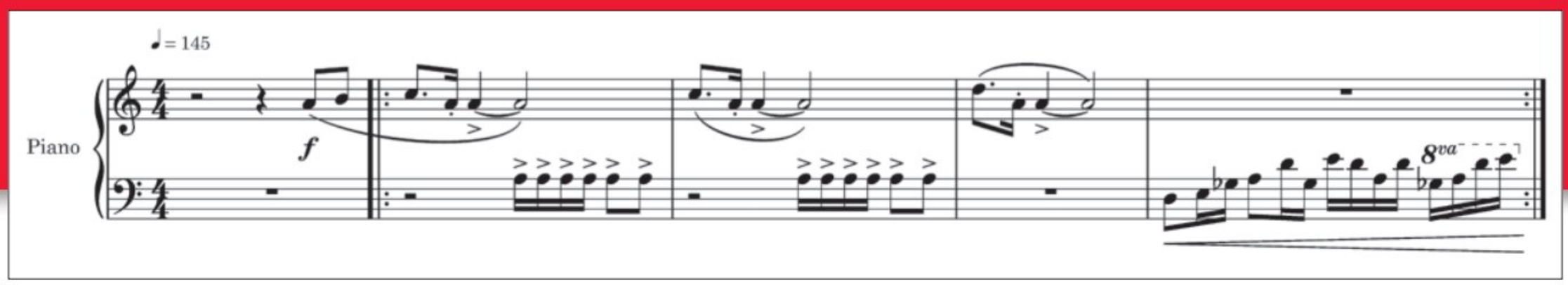


■ **Figure 7.13** ‘Pressure’ chords by Disasterpeace and Phrygian mode for improvisation

Experiment with music software and try to replicate these sounds. Make sure you draw diagrams detailing how you ended up with the sounds you created (for example Figure 7.14).



■ **Figure 7.14** E minor on the free synthesiser Helm





■ **Figure 7.15** Transition section for 'In the Halls of The Usurper' by Jake Kaufman

AN 8-BIT RECIPE

The magic of Jake Kaufman's music is in his ability to communicate a melody through repetition. Kaufman knows repetition can be a good thing, but endless loops only introduce boredom and detract from the storyline. Kaufman therefore uses *transition* sections to join his themes together. It is these transition sections that pop out at you in moments of gameplay and make you think 'wow, what's going to happen now?'.

In the example above (see Figure 7.15), Kaufman has used a *question and answer* pattern between the top and bottom parts to get a clear space that emphasises the rhythm and intervals.

EXTENSION

Using the music technology we now carry around in our pockets, you could experiment with **creating** a series of these transitions but with an 8-bit sound using GarageBand **www.apple.com/mac/garageband**, SoundTrap **www.soundtrap.com**, Helm (**https://tytel.org/helm**) or AudioKit SynthOne **https://audiokitpro.com/synth**. Look for effects where you can edit the parts you record.

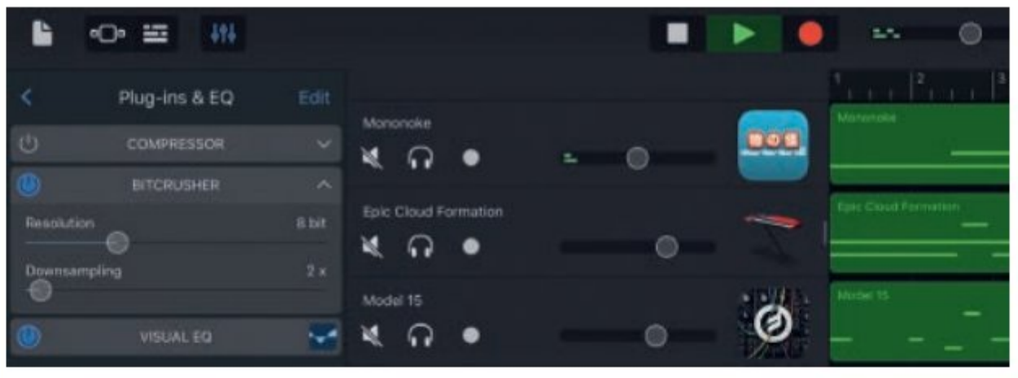
ACTIVITY: A 'Shovel Knight' transition

ATL

- Creative thinking skills: Focusing on the process of creating by imitating the work of others
- Organisation skills: Selecting and using technology effectively and productively

Using this idea of *question and answer* with rhythm, get into pairs to perform a series of body percussion patterns. Whatever you come up with will be transferred to notes later:

1. **Establish a tempo and pulse by improvising short clapping patterns together in your pair. It can be anything you want, but make sure there is a mixture of rhythm values (8ths and 16ths).**
2. **Test several patterns and notate them graphically / traditionally in your portfolio.**
3. **Decide on your best pattern and divide it into part 1 and part 2 for you and your partner to perform.**
4. **Attach the notes of the original theme by Kaufman above your rhythm.**
5. **Perform your new transition theme and reflect on this process in your portfolio.**



■ **Figure 7.16** GarageBand effects such as 'Bitcrusher' emulate 8-bit game sounds

Assessment opportunities

In this activity you have practised skills that are assessed using Criterion A: Knowing and understanding and Criterion C: Thinking creatively.
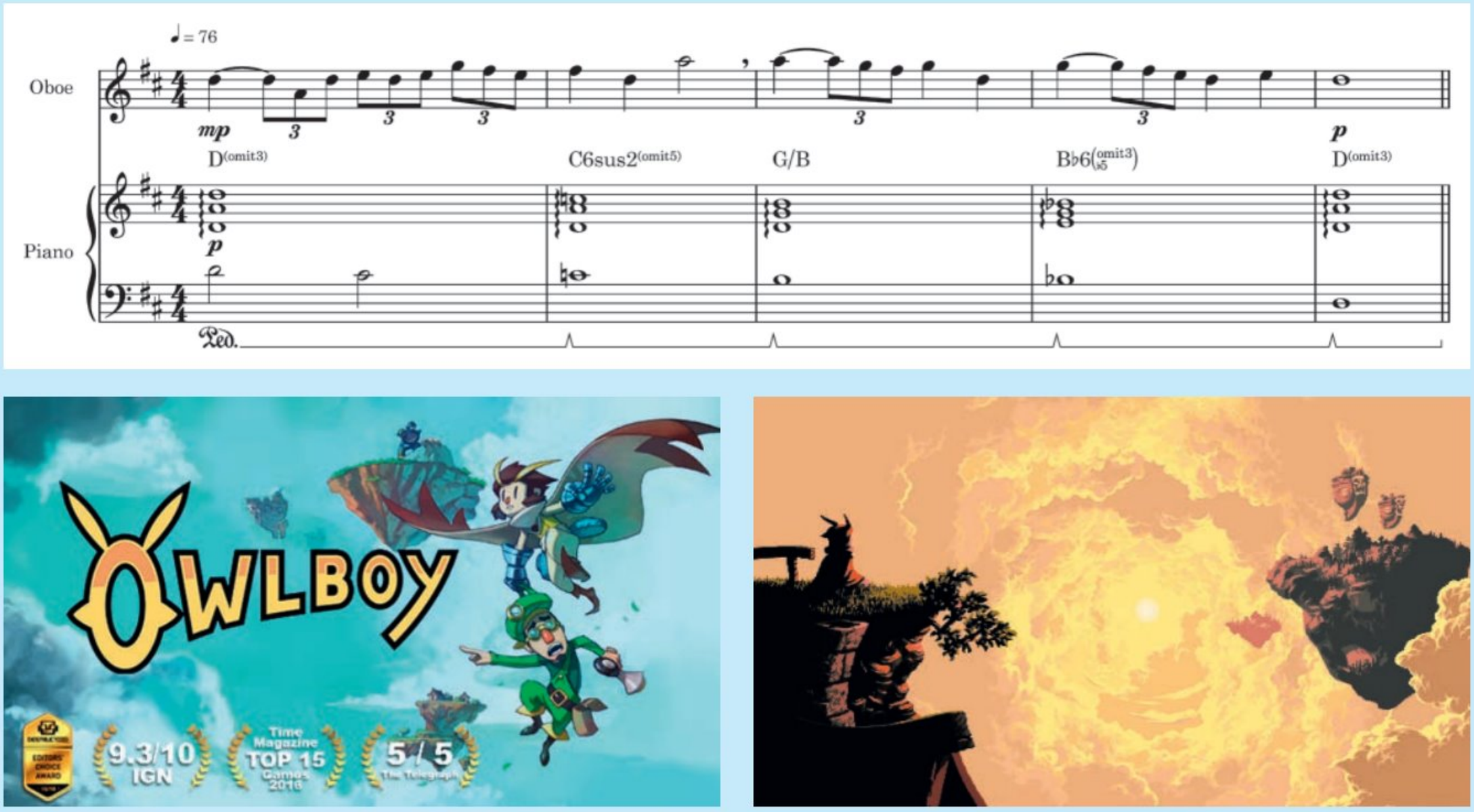
Game score mission

‘Owlboy’

‘Owlboy’ is a platform-adventure video game released in 2016 by D-Pad Studio with 8-bit styled graphics. The composer, Jonathan Geer, creates an incredible world through orchestration: of both traditional instruments and synthesisers. *Orchestration* here means Geer has chosen which instruments play depending on how clearly they will communicate their parts in the ensemble.

Listen to the track ‘Main Title’ on the playlist and in your portfolio create a mind-map of which instruments you think would work best playing the melody, and which would work best playing the bass line. Can you also identify the instruments Geer has chosen?

Note: Geer has used a vital orchestration technique called *doubling*, where he gives the melody to multiple instruments so that it is heard more clearly above the ensemble.

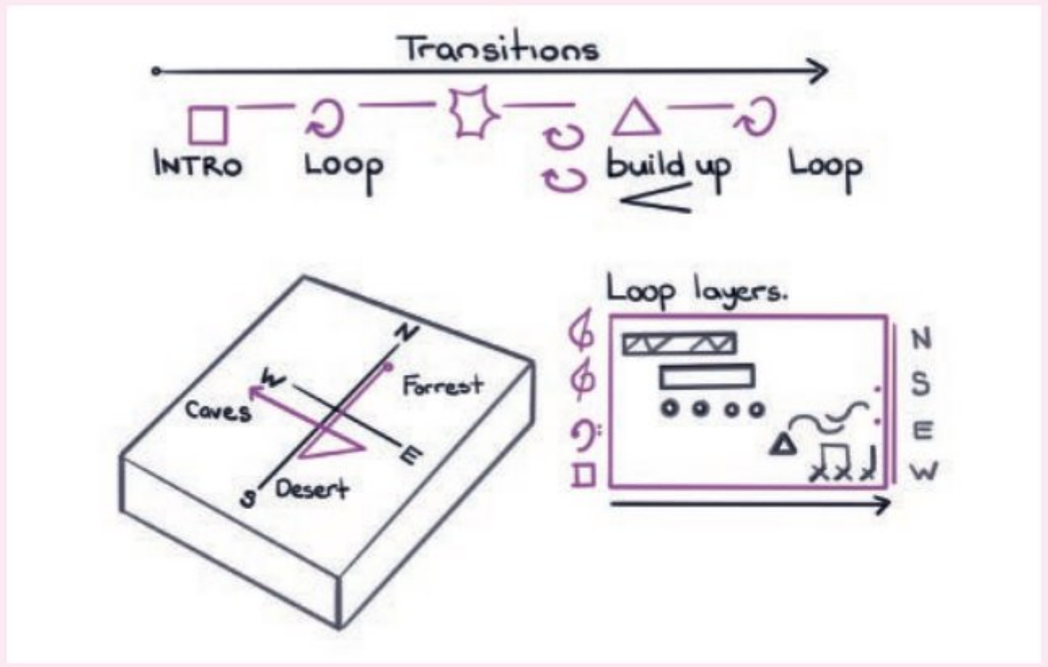


■ **Figure 7.17** ‘Owlboy’ ‘Main Title’ melody and harmony in 2 phrases

Music exploration: Adaptive gameplay

Remember the intro–loop–transition structure for writing game scores? The next level up from this idea is to see it in 3D. Imagine you are exploring a ‘village’ and entering several houses to purchase items. The music needs to sound similar for each house, but still maintain structural unity for the ‘village loop’. This means different layers of this loop need to be composed, and the game will trigger each layer as it adapts to the player’s choices.

You could easily create a loop in GarageBand or SoundTrap, but mute and unmute different layers or sound effects to get this idea of adaptive playback. Create a ‘village loop’ and try it yourself.



■ **Figure 7.18** 2D then 3D game scoring model

How does a palette of sound communicate meaning to an audience?

REMAKING THE OLD INTO SOMETHING NEW

Composer Sergei Prokofiev (1891–1953) had a love for opera. His 'The Love for Three Oranges, Op. 33', premiered at the Auditorium Theatre in Chicago in 1921. Watch a live score version of its 'March' for piano: **https://youtu.be/Y0s3bCL1CrA** or listen to the orchestral version on the playlist.

Prokofiev was very adept at choosing the correct instruments to play his themes. He knew how to communicate rhythm, melody and harmony through altering the way instruments played their parts (called *orchestration*). It was as if he had an artist's palette in his mind and could choose instrumental colours as he composed. Computer game scoring works on the same principle!

Choosing a *sound palette* within a game is essential. Not only do you want consistency, but you want to pick instrumental colours that propel the action and story. In our time we get to work with electronic and traditional sound sources.
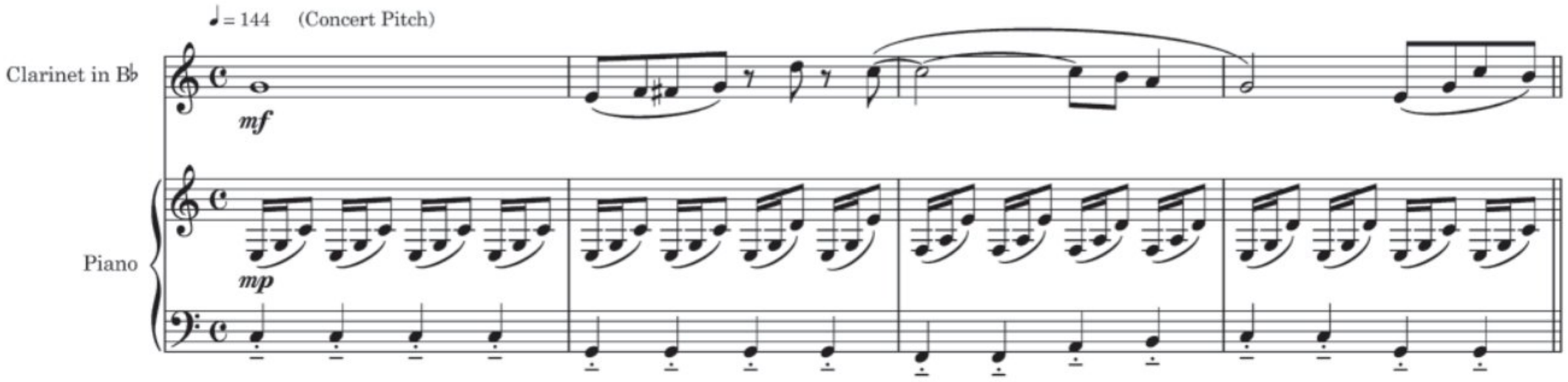
EXTENSION

Ensemble performance: 'Nintendo Music' by Matthew Hindson

'Nintendo Music' is a brilliant composition to reflect on in your portfolios. Australian composer Matthew Hindson (b. 1968) scored this piece for clarinet and piano in 2005, expertly crafting the iconic tunefulness and sound effects of what you would expect to hear when playing a Nintendo console. His writing incorporates **stings**, **level loops** and tags. The beautiful melody is orchestrated to sit clearly above the **arpeggios** and staccato notes of the accompaniment.

Listen to his piece 'Nintendo Music' on Soundcloud here: **https://soundcloud.com/faber-music-musicfornow/sets/matthew-hindson** and view the score via Faber Music here: **http://scorelibrary.fabermusic.com/Nintendo-Music-7663.aspx**

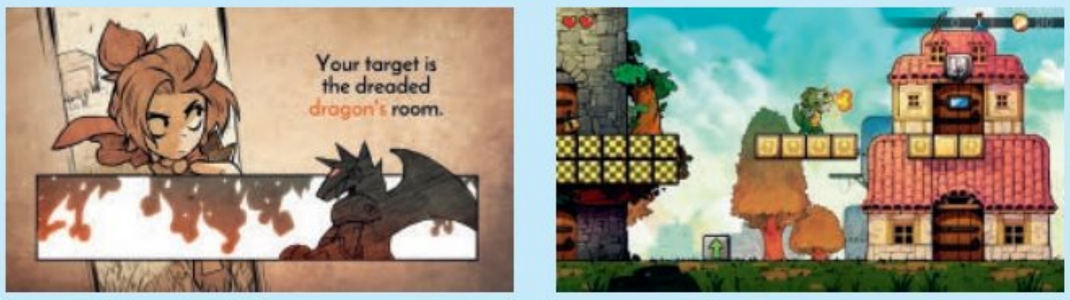




■ **Figure 7.19** 'Nintendo Music' melody and accompaniment mm15–18

Game score mission

‘WonderBoy: The Dragons Trap’



■ **Figure 7.20** ‘WonderBoy III: The Dragon’s Trap’ press images

The original ‘WonderBoy III: The Dragon’s Trap’ débuted in 1989 for the Sega Master System, but it was remade in high definition for multiple platforms in 2017. Multi-instrumentalist and composer Michael Geyre was then invited to play and arrange the music of Shinichi Sakamoto for this classic 8-bit game.

The game itself sets the protagonist in a castle, cursed to roam through imaginative worlds as different animal characters. This mission will give you insight into two aspects of game scoring: the orchestration of a melody and sound design.

Watch a development diary from developer Lizardcube, where these two aspects are discussed in detail: **https://youtu.be/U7SxlQdTW4c**

1 Orchestration

Orchestration refers to the way a musician takes an existing melody, rhythm or harmony and makes decisions on how it is communicated with other sound sources. These are some of the decisions that Michael Geyre had to make, as seen in the development diary video:

a Will the melody be played on a higher or lower-sounding instrument?

b Does the melody need to be doubled above or below so that it is heard more effectively?

c Which instruments can accompany this melody without getting in the way rhythmically or harmonically?

d If the melody is using long notes, can strings be used to pluck the chords? Or if the melody is plucked on a mandolin, can the strings and woodwinds play sustained notes?

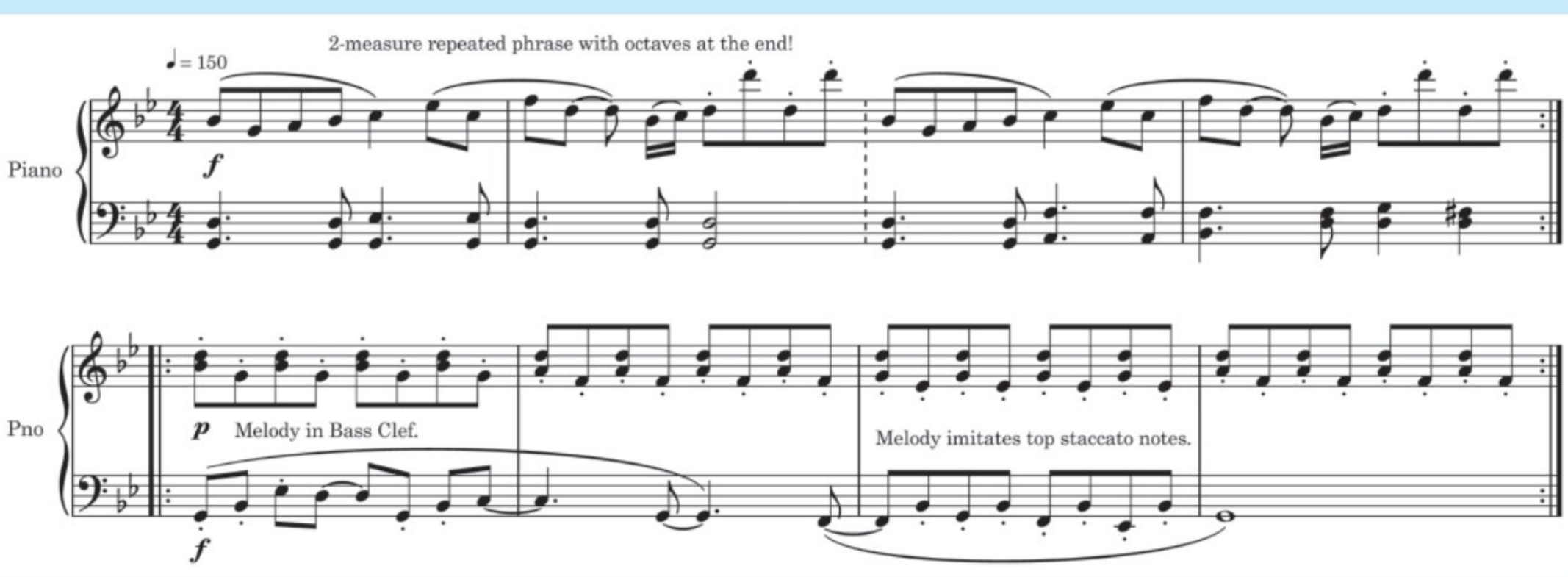
e When there is repetition in the melody, can any of the decisions above be reversed?

Perform the opening theme in Figure 7.21 in small groups, making active decisions on who will play which part. You will notice there are moments where higher-pitched instruments could be featured (such as the octaves), and times where lower-pitched instruments have the melody. Be creative in how you perform each layer.

2 Sound design

As you perform the example below, improvise small *stinger* sounds that jump out from the music. These would have been added as shield, sword or jumping effects in the game. Experiment with ways to produce these sounds on your instruments or with technology.

You can finish off the entire activity by performing your ‘WonderBoy’ versions live.



■ **Figure 7.21** ‘WonderBoy’. Composer S.Sakamoto. Arrangers Michael Geyre and Romain Gauthier

Are game scores the last bastion of good melody-writing?



■ **Fig 7.22** The Banner Saga scored by Austin Wintory

QUESTION STARTS

In game scoring, we have seen that there are choices to be made in sound design with loops, orchestration and clear melodic writing. But why is it important that melodies are heard in a game?

1 **Brainstorm a list of at least 12 questions about why it is important to have melodies included in a game. Use these question starters to help you think of interesting questions:**
 - a **How would it be different if…?**
 - b **Suppose that…?**
 - c **What is the role of…?**
 - d **What would change if…?**

2 **Review the brainstormed list and star the questions that seem most interesting, then select one of the starred questions to discuss whether game scores are truly the last place where we hear good melodies anymore.**

3 **Reflect: What new ideas do you have about the topic of melodies in games, which you didn't have before?**
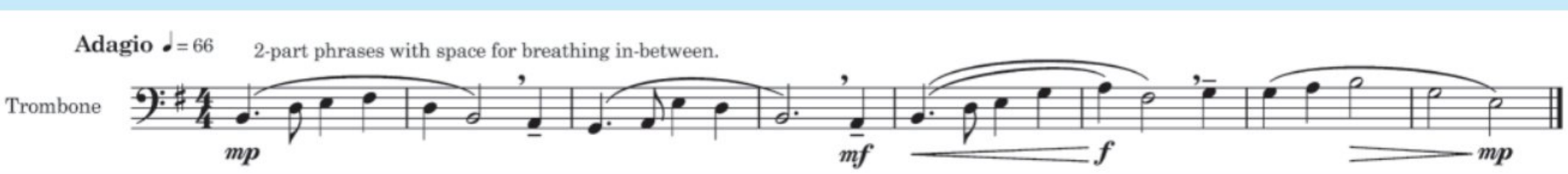
In rounding-off the discussion for this activity, listen to composer Austin Wintory's 'Apotheosis' from the game 'Journey' on the playlist. Does this piece support your findings? You can also view a copy of the score on YouTube here: **https://youtu.be/_e0ubtxtB6U**

TRADITIONAL STORYTELLING IS KEY

Game score mission

'The Banner Saga'

'The Banner Saga Trilogy' is a 2D scrolling, role-player game that directs a host of Viking characters through a dying world. Every decision can take you somewhere else in the game. First released in 2014 by Stoic, composer Austin Wintory began creating a musical world centred on a palette of wind and percussion instruments. Wintory's theme, seen in Figure 7.23, is echoed throughout the game using **motivic development**. You will hear it stretched out, played shorter or even in small **fragments** at his Soundcloud here: **https://soundcloud.com/awintory/sets/the-banner-saga**

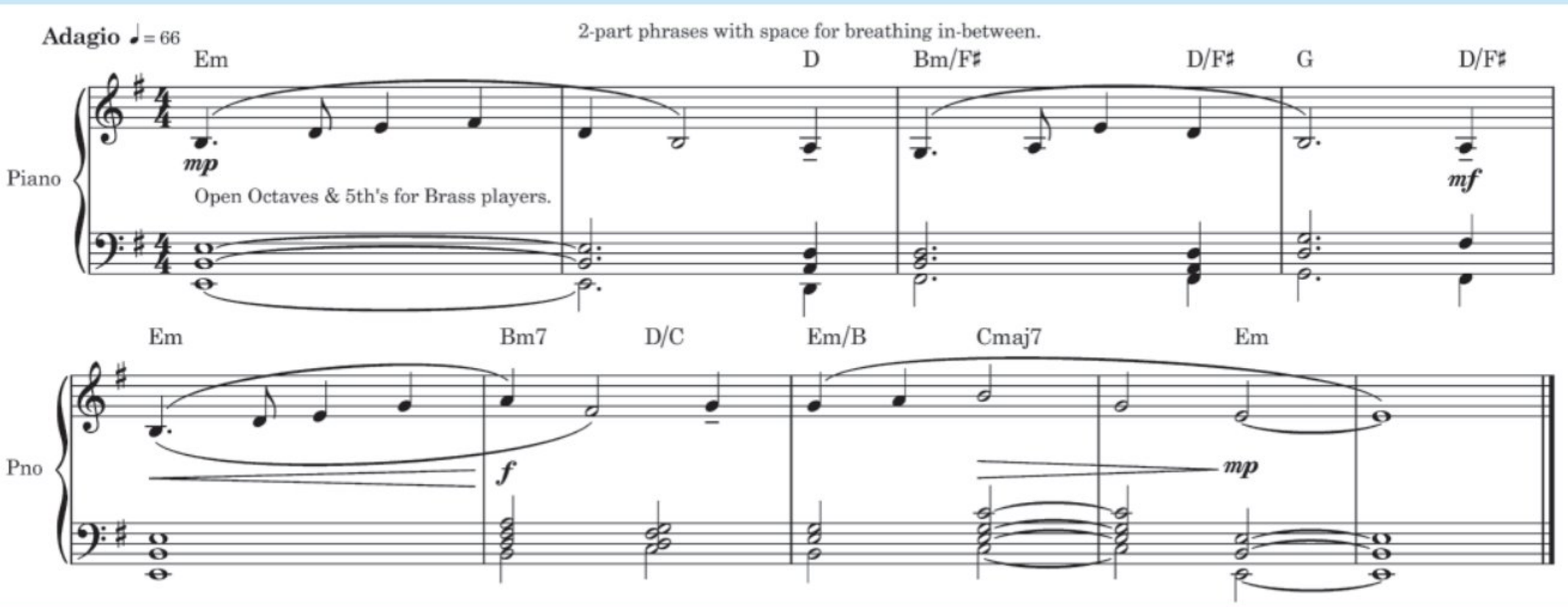


■ **Figure 7.23** 'The Banner Saga' 'We Will Not Be Forgotten' theme transcribed

1 The *theme* itself is haunting, and effectively communicates the story within a *monophonic* (single melodic) line.
 - a Play this theme on a series of instruments including GarageBand or Helm synthesiser. Does the type of instrument change the character of the melody?
 - b Wintory adds in a series of bass notes that both support and clash with the melody line to give it its Viking-like sound. Divide your performance group into two, with some playing the bass and others remaining on the melody line.

Listen carefully to the sounds that result from this performance. By adding in this extra layer beneath the melody, you are now creating a *homophonic* **texture** of melody and accompaniment.

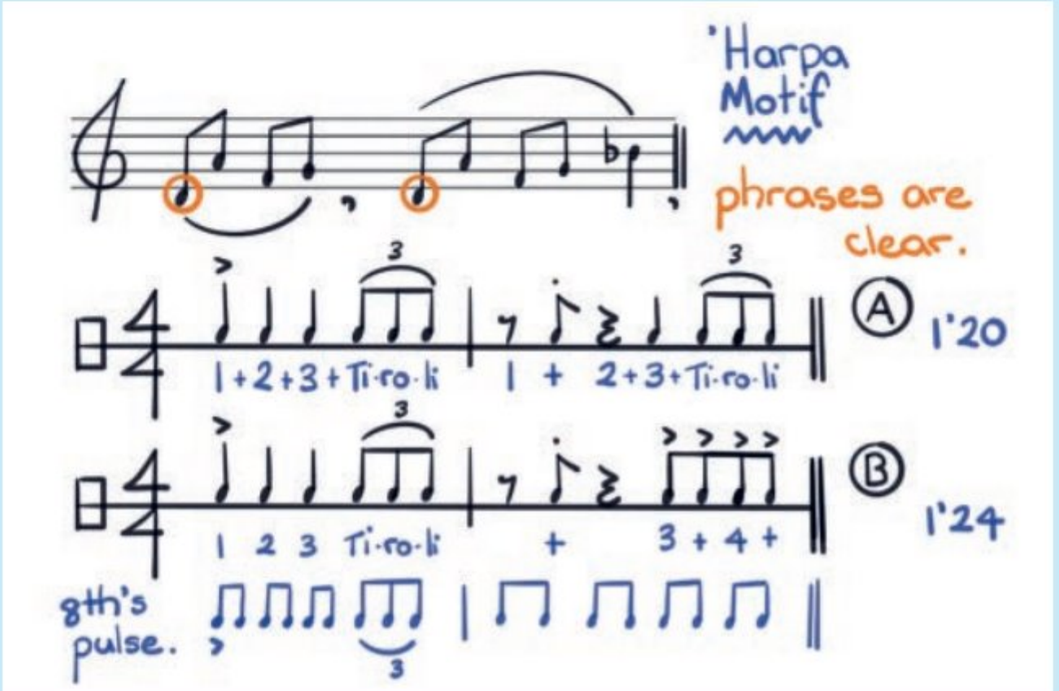
➤



■ **Figure 7.24** 'The Banner Saga' 'We Will Not Be Forgotten' theme with harmony transcribed

2 Sound design

As part of the exploration of a world on the brink of war, Wintory turned to some interesting forms of sound design. He used an instrument from Sweden called a *nyckelharpa*, as well as a violin, drums, didgeridoo and a distorted guitar. Listen to the track 'Cut with a Keen-Edged Sword'. You will first hear the nyckelharpa with its **motif**. This is then followed by didgeridoo and metal guitar riff (0'35) with **tremolo** violin on top. Finally, a heavy drum **ostinato** enters and takes over the track (1'02) for a violin cadenza (solo).



Break off into small groups and and perform the motif with the two rhythmic phrases A+B. Can you design a war-like sound with this material?

3 Music roadmap

In this video, Wintory describes how he approached scoring for the game 'The Banner Saga': **https://youtu.be/d81QR1-4tas**. Most composers develop a music roadmap of their themes: the palette of sounds to choose from and how to propel the action forward.

Using the ideas that you have interacted with above, imagine you had to create a musical roadmap for a new Viking game that began with a story of the old Norse gods. In your portfolio, draw a mind-map of your sound palette and several motif or rhythm sketches. Which musical choice will you make?

■ **Figure 7.25** 'Cut with a Keen-Edged Sword' sketched out graphically

EXTENSION

Sound like a Viking

There is a video of choral group Árstíðir that inspired composer Austin Wintory for his 'Banner Saga' scores. Listen to them perform the 13th Century Icelandic hymn 'Heyr himna smiður' at the train station in Wuppertal, Germany: **https://youtu.be/e4dT8FJ2GE0**. This piece works as a vocal performance, string ensemble or chamber performance, and **using** the press kit from 'The Banner Saga' you can set your performance to the trailer: **https://youtu.be/AZ8CWy4kNqY**

What is a *leitmotif*?

IMMERSIVE WORLDS OF CHARACTER

Hector Berlioz (1803–1869) was a French Romantic composer who wrote an incredible **programmatic** work called 'Symphonie fantastique: Épisode de la vie d'un artiste Op. 14' ('Fantastical Symphony: An Episode in the Life of an Artist') in 1830. The work is a distinct break from the forms of the Classical period and embraces the role of expressive storytelling in five **movements**. To tell his story of falling in love, then that love not being returned and the resulting violence, Berlioz used what he called an *idée fixe* (a recurring theme that represents his love in each stage of the storyline). This melodic theme is often transformed by the story as each movement progresses. Listen to Berlioz's 'Symphonie Fantastique, Op. 14 – 1. Rêveries, Passions' and you will hear the *idée fixe* around the 6'50 mark (see Figure 7.26).
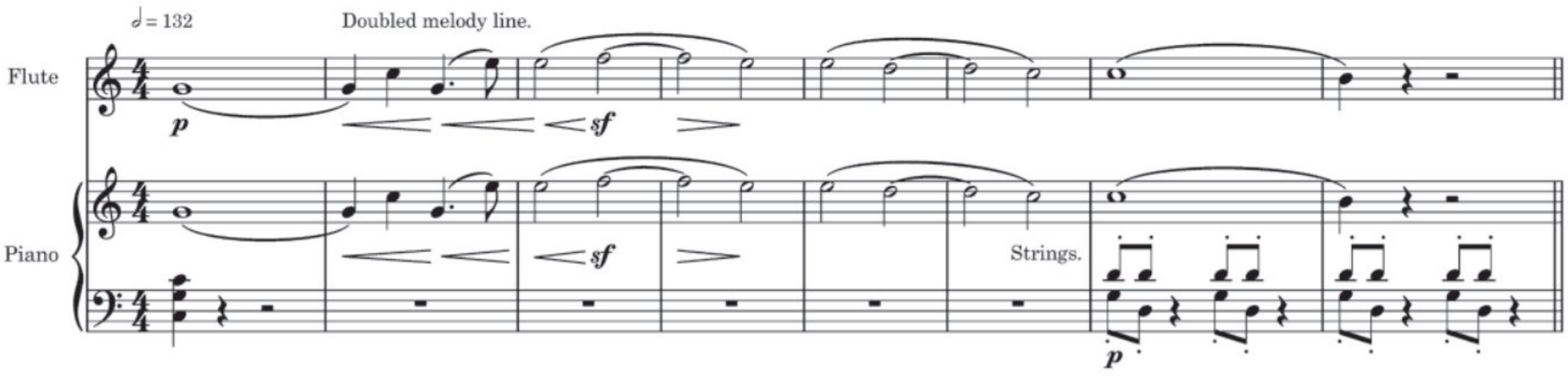
Similarly, by using a short interval motif combined with a low male choir and strings, composer Steve Jablonsky crafts a perfectly eerie and ominous **leitmotif** in his track from the game 'Gears of War: Return of the Omen' (see playlist). A *motif* is a short musical idea, whereas a *leitmotif* can be chords, a rhythm or a melody; longer and more 'complete' than a motif.

HEADLINES
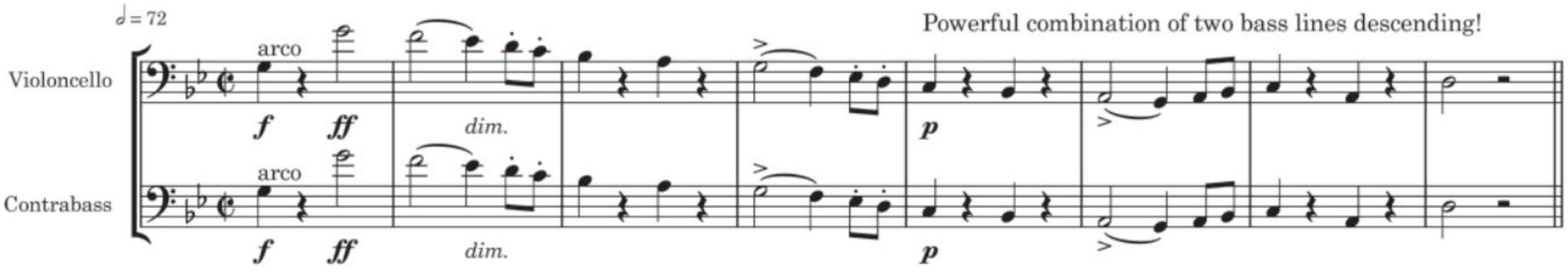
Both Berlioz and Jablonsky's music help communicate their stories, and characters, simply by how they repeat and orchestrate these leitmotifs.

Listen also to Berlioz's 'March to The Scaffold' and reflect on the following points:

1. **If you were to write a headline for an online publication that captured the most important aspects of *leitmotifs*, what would that headline be?**
2. **How has your headline changed based on today's discussion? Or: How has it changed after listening to these pieces?**



■ **Figure 7.26** 'Symphonie fantastique' recurring theme by Berlioz



■ **Figure 7.27** Doubling in two Bass Clef instruments with a descending G minor scale in 'March to the Scaffold'

Game score mission

‘Hollow Knight’ (part 1)

The game ‘Hollow Knight’ is a 2D *Metroidvania* action-adventure game. Composer ‘Christopher Larkin’s score plays a huge part in welcoming players into the sprawling world of Hallownest’.

Team Cherry produced the game and requested that Larkin ‘… evoke a sense of dark elegance and melancholy’ with his music. Open your portfolio and brainstorm how you would approach writing music with this description. What would your *music roadmap* look like?
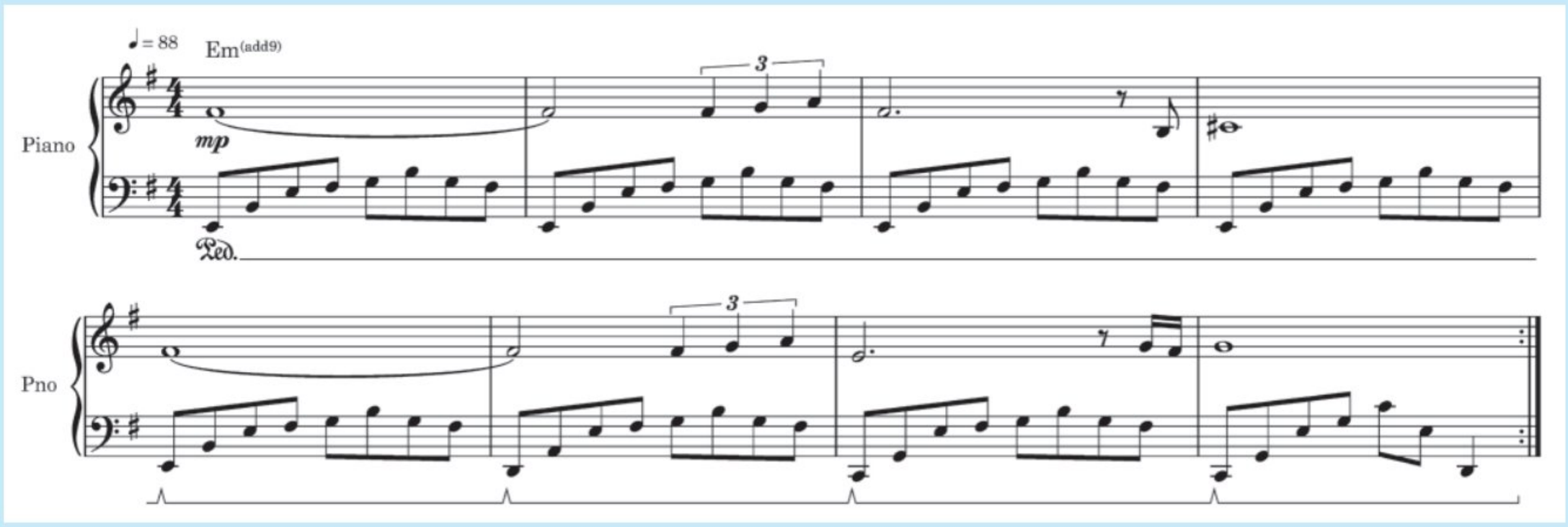
Larkin’s many musical influences range from ‘… the melancholic film scores of composer Joe Hisaishi, to the textured, [impressionist] music of Debussy, to the whimsical game melodies of Nintendo tunesmith Koji Kondo’, such as with the opening minor 9th arpeggio heard in the track ‘Dirtmouth’ (see Figure 7.28).

But it has been his *leitmotifs* for this game that have captured everyone’s imaginations (see Figure 7.29).

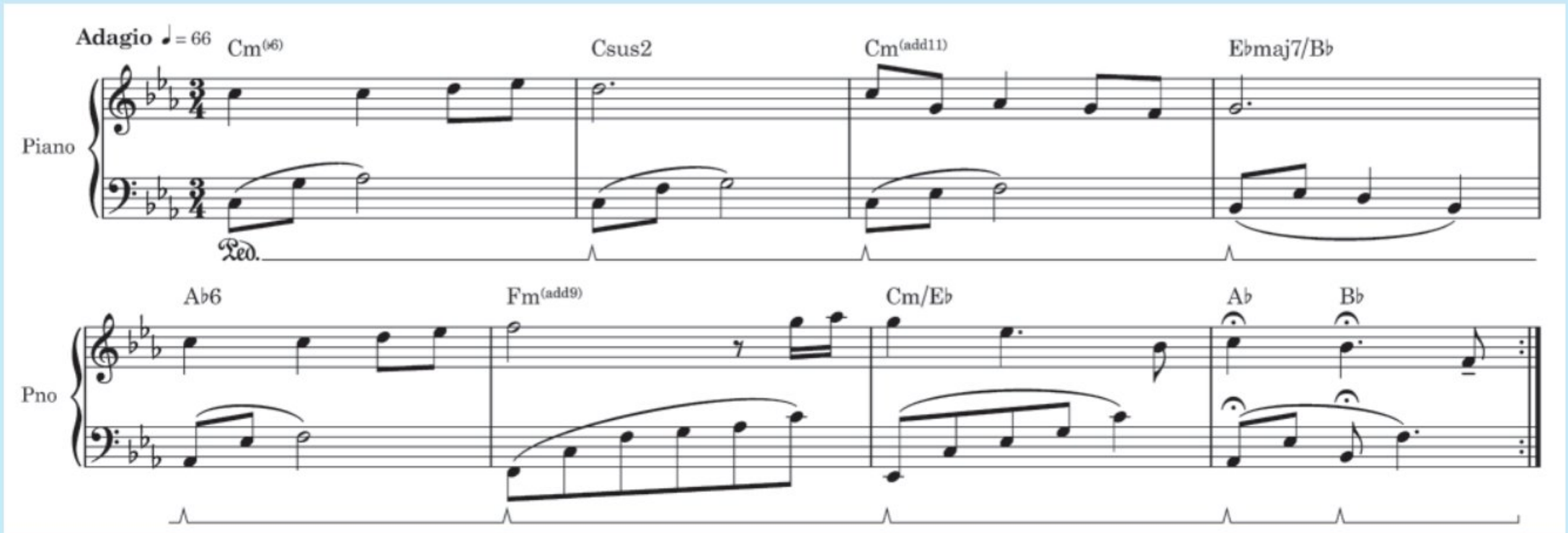
> *“There are a lot of thematic ideas throughout ‘Hollow Knight’. One in particular is the initial ‘Hollow Knight’ theme on the piano, which we hear in quite a few places…”*

This theme has two halves that answer each other, as a *question and answer* pair. Larkin orchestrates them with different **time signatures**, pedals and developed rhythms depending on the level (see Figure 7.30).
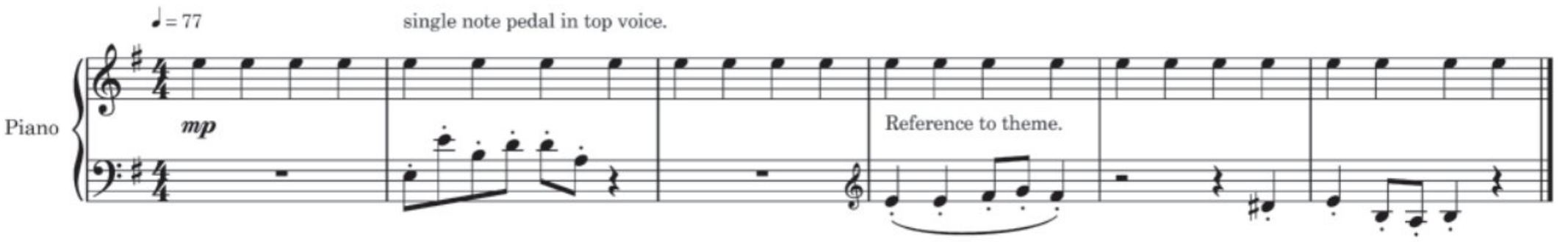
Play the themes below on your instrument or device. As you play each version, brainstorm ways in which you would transform the ‘Hollow Knight’ leitmotif?
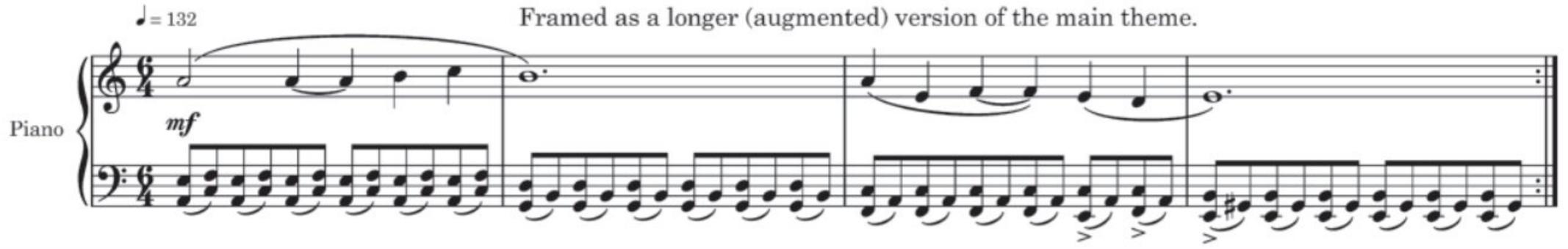


■ **Figure 7.28** ‘Dirtmouth’ opening arpeggio using an E minor (add 9) chord



■ **Figure 7.29** ‘Hollow Knight’ leitmotif with extended chords centred around C minor



■ **Figure 7.30** 'Fungal Wastes' use of leitmotif beneath a drone or pedal



■ **Figure 7.31** 'Enter Hallownest' use of leitmotif augmented to a time signature of 6/4



■ **Figure 7.32** 'Hollow Knight' press kit images

ACTIVITY: Working with leitmotifs

■ ATL

■ Media literacy skills: Understanding the impact of media representations and modes of presentation

In the game 'Hollow Knight', there are leitmotifs that Larkin transforms through motivic development. **Using** the ideas **presented**, **create** your own version of his 'Hollow Knight' leitmotif.

1 **Copy Figure 7.28 into software such as MuseScore or SoundTrap to hear it play back.**

2 **With pencil and paper, plan how you will transform it using some of the following techniques: a repetition, b augmentation, c diminution and d playing it backwards.**

3 **Now, using notation or recording software, alter the leitmotif and reflect on the results. Ask yourself: Can I hear the original theme? And: Which techniques worked really well?**

This is the beginning of setting characters and ideas to musical leitmotifs.

◆ Assessment opportunities

In this activity you have practised skills that are assessed using Criterion B: Developing skills and Criterion C: Thinking creatively.

To what extent does a leitmotif communicate the storyline?

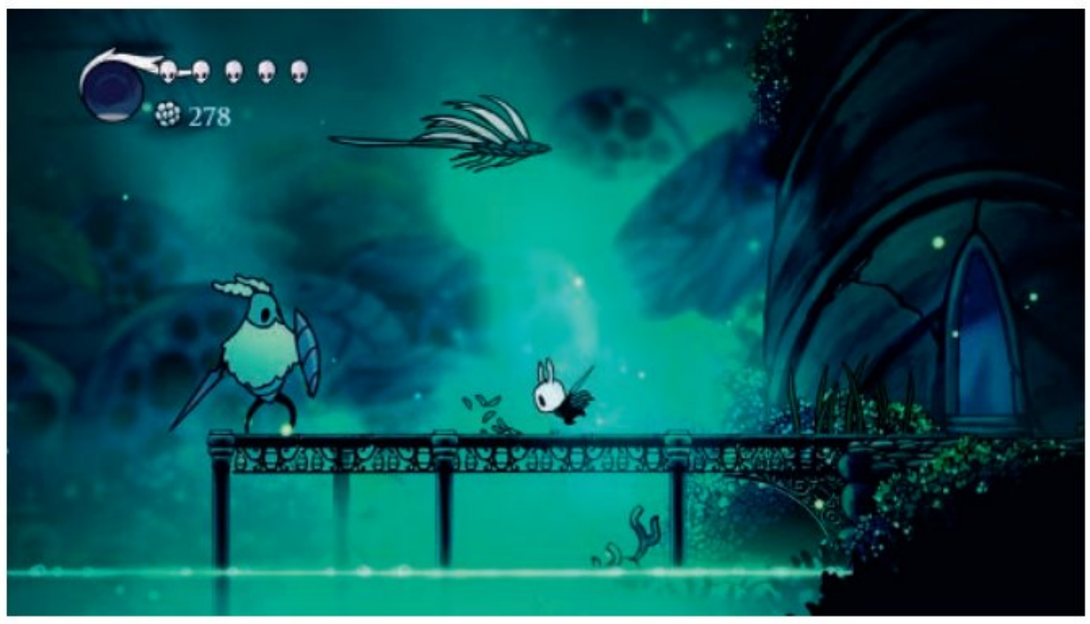
REPETITION IS YOUR FRIEND

In 2017, a game was released by developer Guerrilla Games on PlayStation 4 called 'Horizon Zero Dawn'. The game blended together unique concepts of machines, tribes and landscapes; and then requested the music reflect these elements too! Three composers were brought in for the crafting of the game's score: Joris de Man, and The Flight (Joe Henson and Alexis Smith). Yet these composers also faced a unique problem; time.

> *"One of the main problems the team faced was simply creating enough in-game music – the average player is expected to take approximately 40 hours to complete the whole game. Between them, the composers were asked to produce about four hours of material, which had to be supplied in such a way that it could be rearranged to make new pieces."*



■ **Figure 7.33** Read about the additional sound design of this game for communicating a storyline at www.asoundeffect.com/horizon-zero-dawn-sound-design



■ **Figure 7.34** Ostinato in 'Greenpath'



■ **Figure 7.35** 'Horizon Zero Dawn' press kit images

SEE–THINK–WONDER

Often game scoring involves many sketches and improvisations, and recordings that never make it to the game. Many pieces are recorded in layers called *stems* so that they can be triggered during game play. Sit with a partner and, **using** your portfolio, brainstorm possible solutions to the following points:

1. **What do you see as the initial problem if you were a composer with this game?**
2. **What do you think would be a few possible solutions? How could you approach such a massive task?**
3. **What does it make you wonder about the importance of developing a music roadmap?**

ACTIVITY: Loops and ostinatos

ATL

- Creative thinking skills: Applying existing knowledge to generate new ideas, products or processes

> *"If you're working on a boss track, or any involved orchestral piece, sequence and plan out the entire piece in a piano track first."*
>
> *Christopher Larkin*

Throughout Christopher Larkin's score for the 2017 game 'Hollow Knight', he used many varied ostinatos. Whereas an ostinato is technically a loop, Larkin subtly changes the layers above or below his ostinatos to keep them interesting and working as structural elements or "glue". Just like Larkin, we will **create** our own ostinatos for the piano **using** GarageBand, SoundTrap, Helm or an actual piano. Each track studied is available on the playlist.

1 **'Greenpath'**
This track is based on a 3/4 ostinato using three notes and a rhythm that we have observed in almost every game score so far. To prevent it from becoming monotonous, Larkin adds first the bass notes, then a melodic layer. Choosing a harp to play the ostinato gives it a light and magical quality.

2 **'Queen's Gardens'**
This second ostinato moves into an E Dorian mode as an ascending arpeggio ostinato with a moving melody in between. You can play the left hand sticking to an E-B-E pattern, or experiment with the E Dorian mode on top of a pedal note.

3 **'Soul Sanctum'**
This ostinato is a cliché of electronic music. However, despite the four-note ascending pattern, Larkin uses the notes as chord tones for the harmony he places underneath. Each chord fits with the repeated arpeggio figure and creates an ambient atmosphere.

Making an ostinato

You have three different examples **demonstrating** how to create a piano ostinato pattern. Using your instruments and technology, create your own ostinato first on a piano, then orchestrate it a little differently. Make sure to keep a record of them in your portfolio.

Assessment opportunities

In this activity you have practised skills that are assessed using Criterion C: Thinking creatively and Criterion D: Responding.
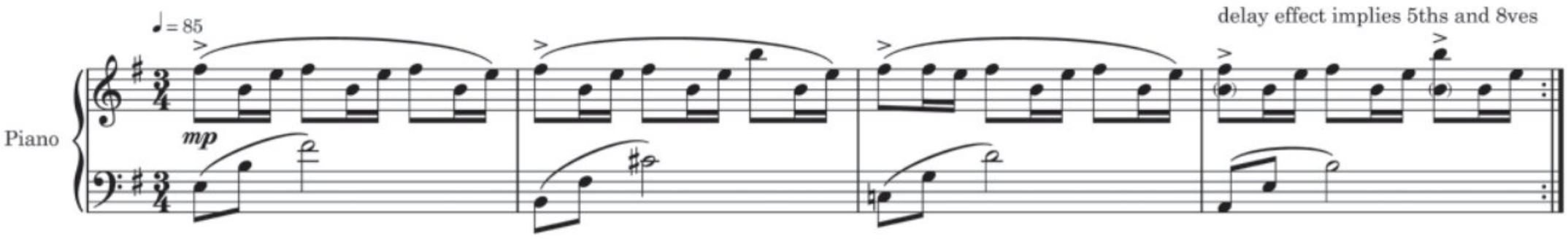


Figure 7.36 Ostinato in 'Greenpath'
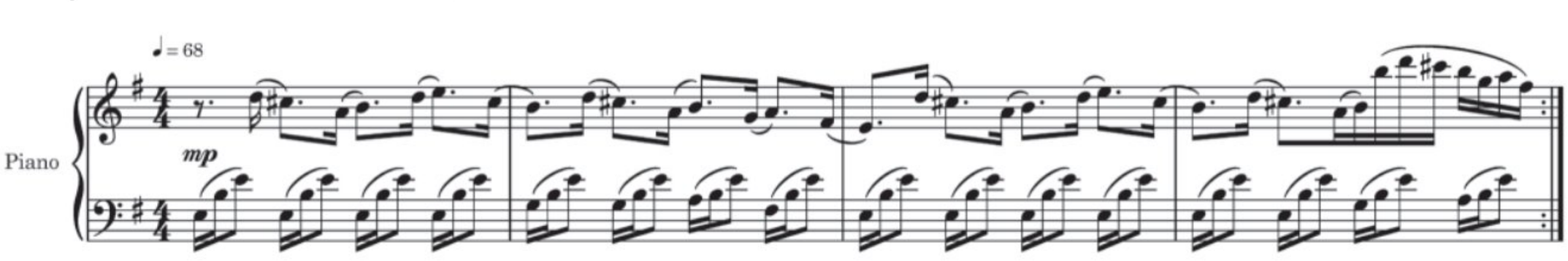


Figure 7.37 Ostinato in 'Queen's Gardens'

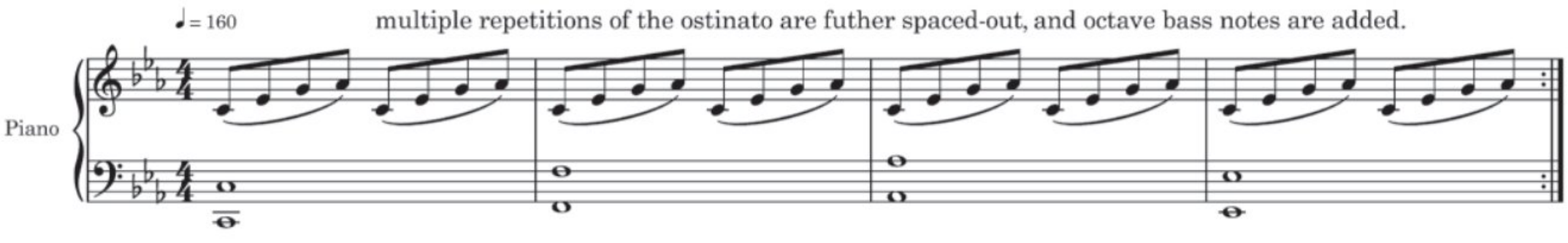


Figure 7.38 Ostinato in 'Soul Sanctum'

Game score mission

‘Hollow Knight’ (part 2)

Another leitmotif that deserves study from Christopher Larkin’s score is that of the secondary heroic figure, Hornet.



■ **Figure 7.39** Hornet from ‘Hollow Knight’

Hornet appears as a mysterious character in the game, with different endings to her theme.
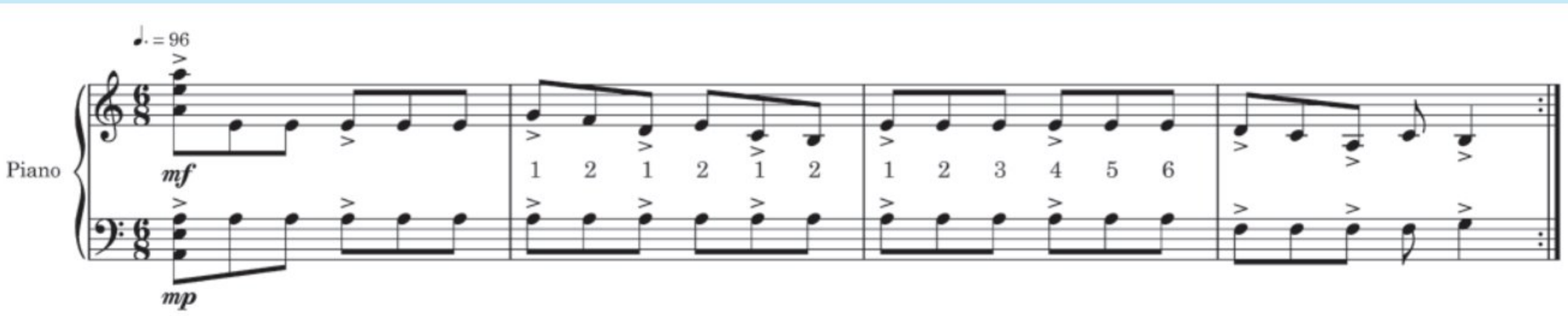
In the opening of the track ‘Hornet’, there is an underlying quaver (8th note) pulse in 6/8 with the **accents** shifting the rhythmic emphasis from groupings of 3 to 2. It is here that we get the A minor leitmotif part 1 (see Figure 7.40).

Then when the longer note melody enters, leitmotif 1 is played underneath leitmotif 2, almost like a support structure for the longer note melody. It finishes with a flourish of ascending semi-quavers (16th notes) (see Figure 7.41).
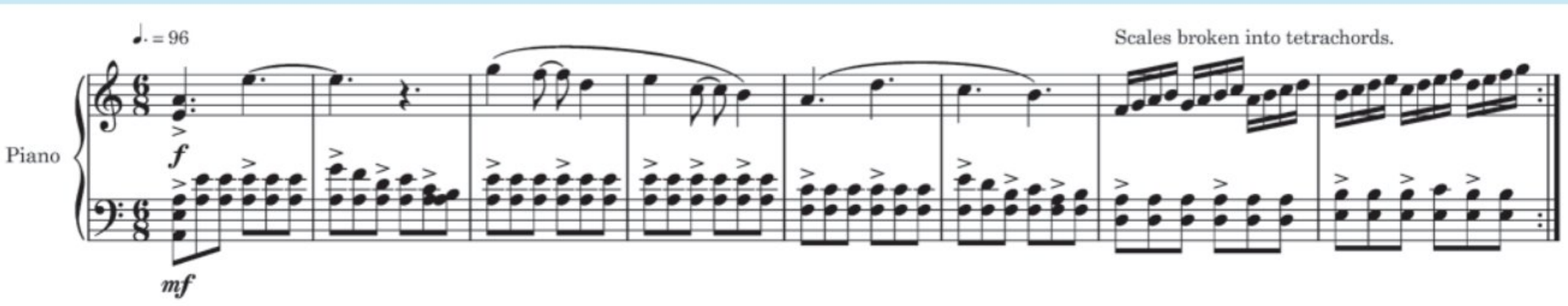
Using these two piano-based ideas, Larkin now changes the ending of leitmotif 2, adds in rapid scales, uses syncopation and even swaps the melody from the top to the bottom with a new ostinato pattern.

Can you discover (orchestrate) another way of performing the ‘Hornet’ leitmotif? Start by entering it into MuseScore or another notation program. Then, change features such as: **a** the rhythmic accents, **b** the ending of leitmotif 2 and **c** by swapping or combining parts.

Document these changes in your portfolio and ask for feedback from a peer. Is there anything you can add or edit?



■ **Figure 7.40** ‘Hornet’ leitmotif part 1



■ **Figure 7.41** ‘Hornet’ leitmotif part 2

When are game scores more than just loops?

MOTIFS, LOOPS AND SOUND DESIGN

Listen to 'Bayek of Siwa' composed by Sarah Schachner from 'Assassin's Creed Origins' on the playlist. As you do, make a structural drawing of everything you can hear, describing the sounds and how often they repeat, beginning with the low-pitch sliding synthesiser sound.

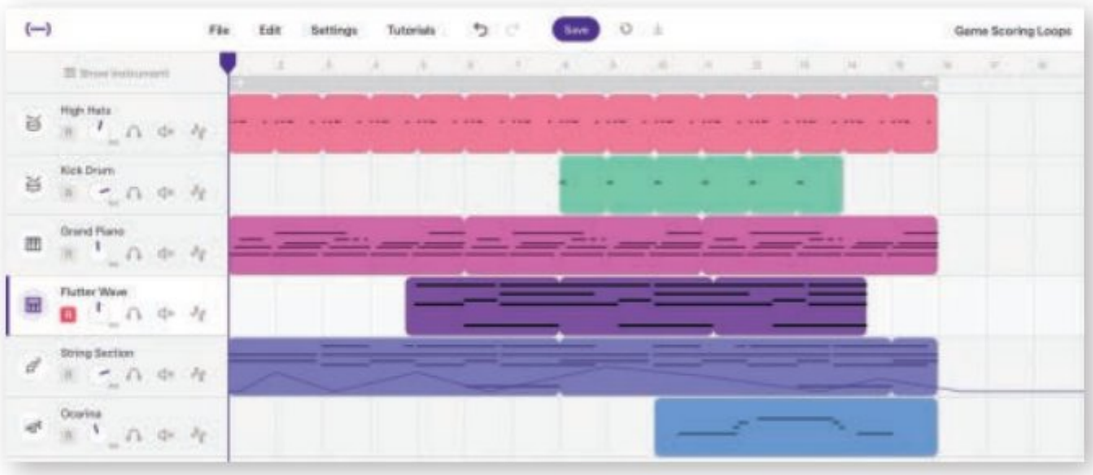
Much of the game scores that you hear today use computer-generated sounds that play back what the composer enters. Schachner, however, mixes this approach with live instruments, playing in the parts herself. The end result is a series of audio files that we would call *loops* or *stems*, layered on top of each other in the order that she determines. The question is: are game scores just loops?

WHAT MAKES YOU SAY THAT?

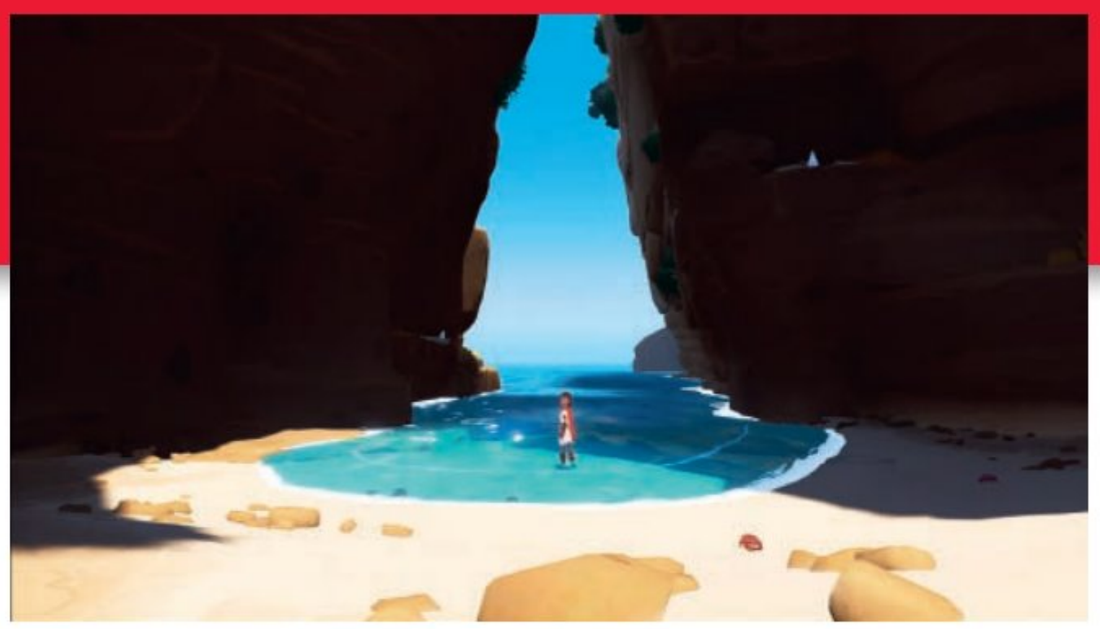
Answer the following points in your portfolio:

1 **What is happening inside the track with regards to loops?**
2 **What do you hear that makes you say that?**
3 **Compare your answers with a partner and discuss as a class.**

What everyone should agree on is that Schachner has **created** all of her own content, editing and slicing the audio, as well as writing distinct motifs for the game. The audio loops that we would find in GarageBand or SoundTrap are good, but they are the same as everyone else's. Creating a unique voice with your music is a major part of game-scoring; something Schachner has used to establish herself as an artist.



■ **Figure 7.43** SoundTrap example of stems from looped recording project



■ **Figure 7.42** 'RiME' game screenshot

ACTIVITY: Making your own loops

ATL

■ Collaboration skills: Delegating and sharing responsibility for decision-making

Using Figure 7.42, your task will be to write a series of loops that communicates the feeling and look of this scene from the 2017 game 'RiME'.

1 a **Remember the work you have done on leitmotifs and ostinatos in previous sections.**
 b **Reflect on Sarah Schachner's work for Assassin's Creed 'Origins'.**

Put yourselves into groups where everybody has a role: improviser, recording engineer, performer, someone to notate themes and an electronic performer (if possible) using a device.

2 a **Perform and record a series of loops that layer over each other (see Figure 7.43).**
 b **Listen as a group while the recording engineer solos and mutes tracks during playback.**
 c **Decide as a group what the order will be for the final playback.**
 d **Using the image as a presentation tool, perform your loops / stems in the order you have decided.**

You have just **created** your first game-score stems that can be used for adaptive game play.

Assessment opportunities

In this activity you have practised skills that are assessed using Criterion B: Developing skills and Criterion D: Responding.

Game score mission

Unravel

Two games from Sweden, 'Unravel' released in 2016 and 'Unravel 2' released in 2018, have established themselves with a unique character and musical score. The artwork and story is about love, loss and mending broken bonds.

The music tells the story in this game, and the score is performed live by two musicians, Frida Johansson and Henrik Oja. Using local folk music and instruments, Johansson, Oja and the developers sought a way to communicate the meaning of *vemod* within 'Unravel'. It translates to 'beautiful melancholy'. As described in the video below, the aim was both to break the player's heart and mend it at the same time:

'Unravel: Music as the Voice of the Game':
https://youtu.be/Dl77C0JLwz0

Using the playlist, listen to the tracks 'Longing' and 'Open Country'.

1 Listening as a group

Once more, get into small groups where each of you can play a sustained note or chord. This could be on a wind or string instrument, synthesiser or device. Using the track 'Longing' as inspiration, work together to create a series of moving textures simply by using your ears:

a Elect a conductor or leader within the ensemble. This person will direct each person when to change their notes.

b Everyone starts playing the same note.

c After a few beats, the leader indicates for someone to change their note. Repeat this process.

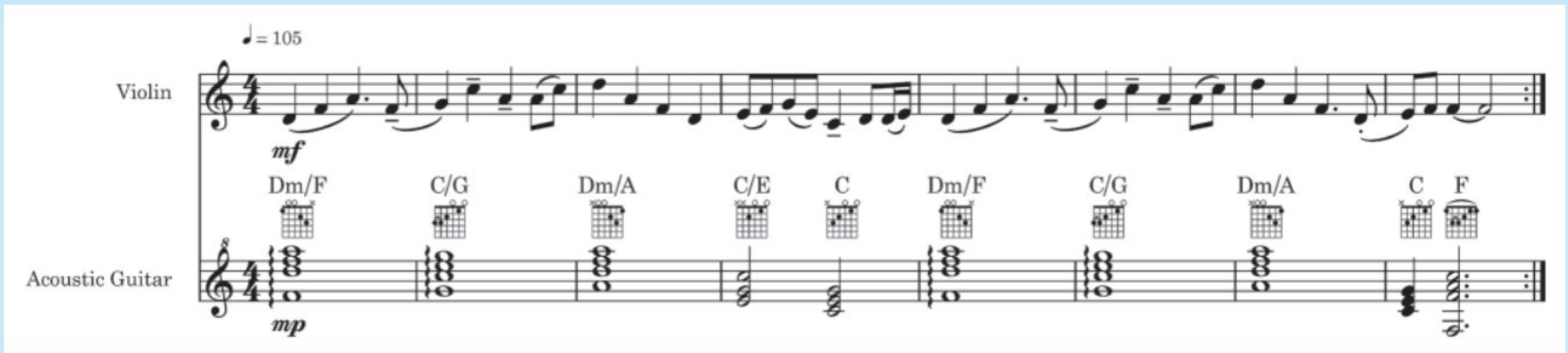
The results will always be random, but if it works, keep it. If not, the leader will keep changing notes until something fits.

2 Folk music as inspiration

'Open Country' has a folk-inspired melody at the 1'45 mark. Play through the melody transcribed below as a group, taking turns on the melody and harmony. This exercise is a live version of orchestration.



■ **Figure 7.44** 'Unravel' press kit



■ **Figure 7.45** 'Unravel: Open Country' transcription for violin and guitar

How does game play connect to the idea of making art?
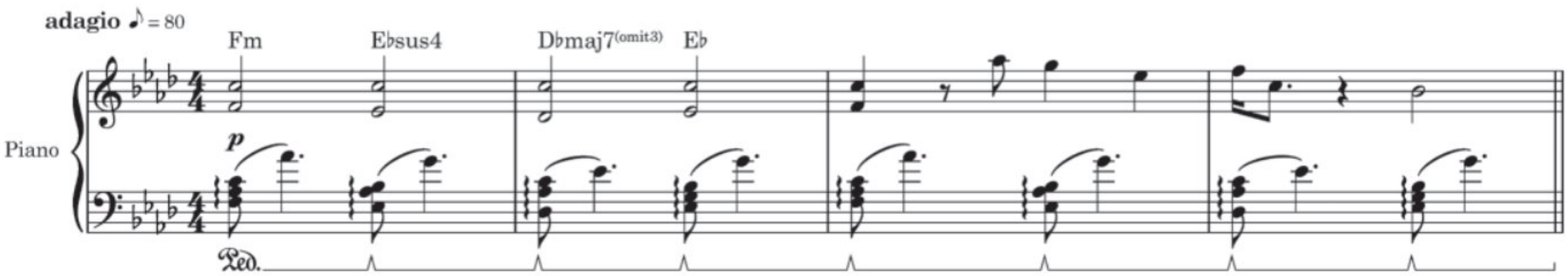




■ **Figure 7.46** ‘GRIS’ press images

ART + MUSIC = MAGIC!

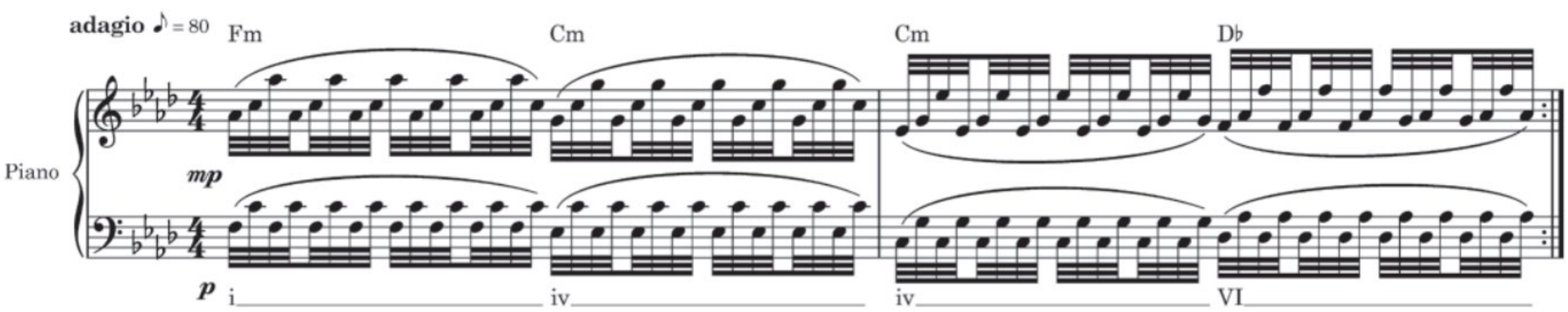
Visual artwork works hand in hand with music when it comes to communicating emotions. Both the artwork and music take on new roles when they intersect in shades of colour, shape or space. ‘GRIS’, released by Nomada Studio in 2018, is a game that exemplifies this.

> *“In Gris, you play as a woman who has lost her voice and, with it, her agency. Her fears and her pain initially take the shape of a flock of birds that work to harass and punish her. She begins the game terribly weak, unable to even put one foot in front of the other. By the end, though, she’s become incredibly mobile and skilled.”*

The striking thing about this game is its use of colour. Shades of grey turn into deep reds and blues, and with an animated watercolour aesthetic the audience becomes directly involved in her growth. The music reflects these changes, and two examples are given below from the track ‘Gris, Part 1’ on the playlist, composed by Berlinist.



■ **Figure 7.47** ‘GRIS’ opening chords



■ **Figure 7.48** ‘GRIS’ arpeggios and progression

COLOUR–SYMBOL–IMAGE

From the sustained chords to the beautiful progression of Fm (i) / Cm (v) / Cm (v) / D♭ (VI), the emotion is raw and the music takes on this role of ‘becoming’ Gris’ emotions.

In your portfolio, notate these examples and complete the following exercise by yourself.

1. **Choose a colour that you feel best represents or captures the essence of grief and / or fear.**
2. **Choose a symbol that you feel best represents or captures the essence of grief and / or fear.**
3. **Now choose an image that you feel best represents or captures the essence of overcoming grief and / or fear.**

“Games can transform the ideas we have and give us ways of expressing emotions in powerful ways.”

ACTIVITY: Orchestrating a leitmotif

ATL

- Creative thinking skills: Creating original works and ideas; using existing works and ideas in new ways

Games are especially good at getting us to make choices. Not only do they inspire the imagination, but they place us, the player, into a new role. We are no longer just an audience; we are now problem-solvers and creators. *Leitmotifs* play a part in guiding us towards this new role.

Consider the game 'Forgotten Anne', released in 2018 by Throughline Games. The artwork, animation and personification of 'lost items' brings a mysterious tale to life like a Studio Ghibli film. Composer Peter Due **outlines** in a series of blog articles at **www.throughlinegames.com/single-post/2017/12/19/The-Music-of-Forgotton-Anne-Part-1** how he sketches each initial theme, but also how he had to fit with the feelings of *longing* and *optimism*. Figure 7.50 is from the character Bonku who longs to return to the human world:

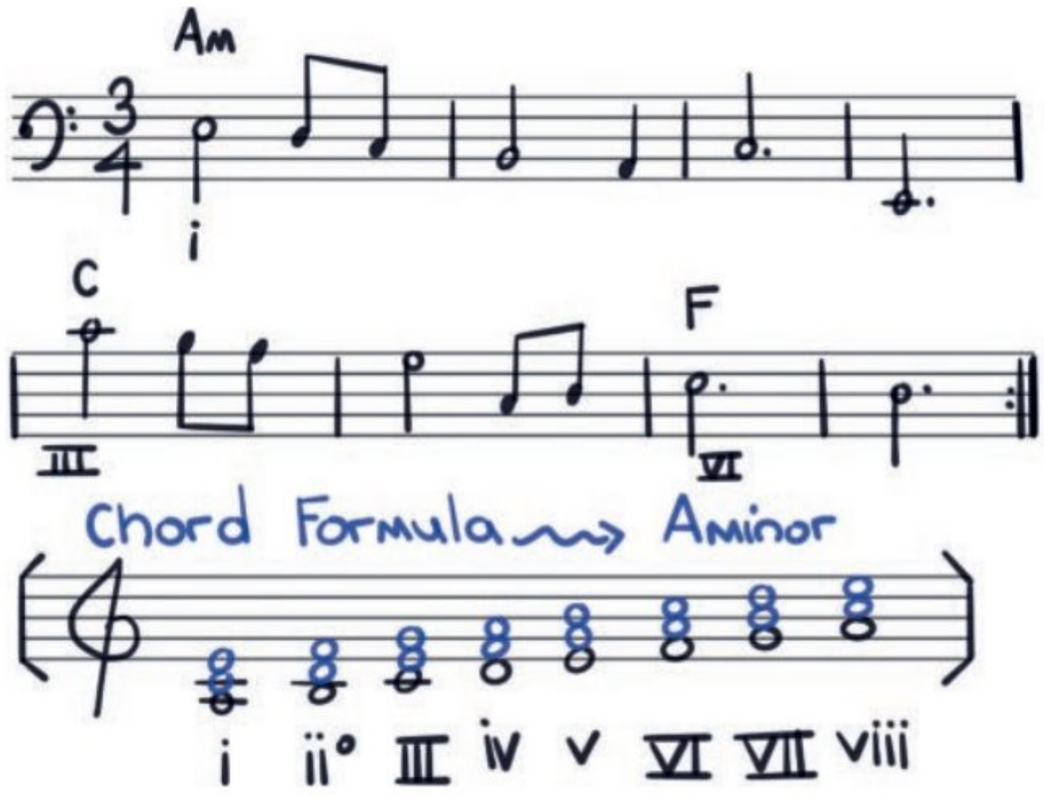


Figure 7.50 'Forgotten Anne: Bonku theme' in A minor with chord formula



Figure 7.49 'Forgotten Anne' press image

Orchestrating a theme

1. **Program this theme into software where you can add more instruments to "colour" it.**
2. **Using your software, add new instrumental layers for the melody.**
3. **Now experiment adding new chords to each measure. The A minor chord formula i-ii°-III-iv-v-VI-VII will help you match the first note 'e' to e minor, or the second measure 'b' to b diminished and so on.**
4. **Record every success and / or failure. This is how you find out what works and what colours you can work with.**

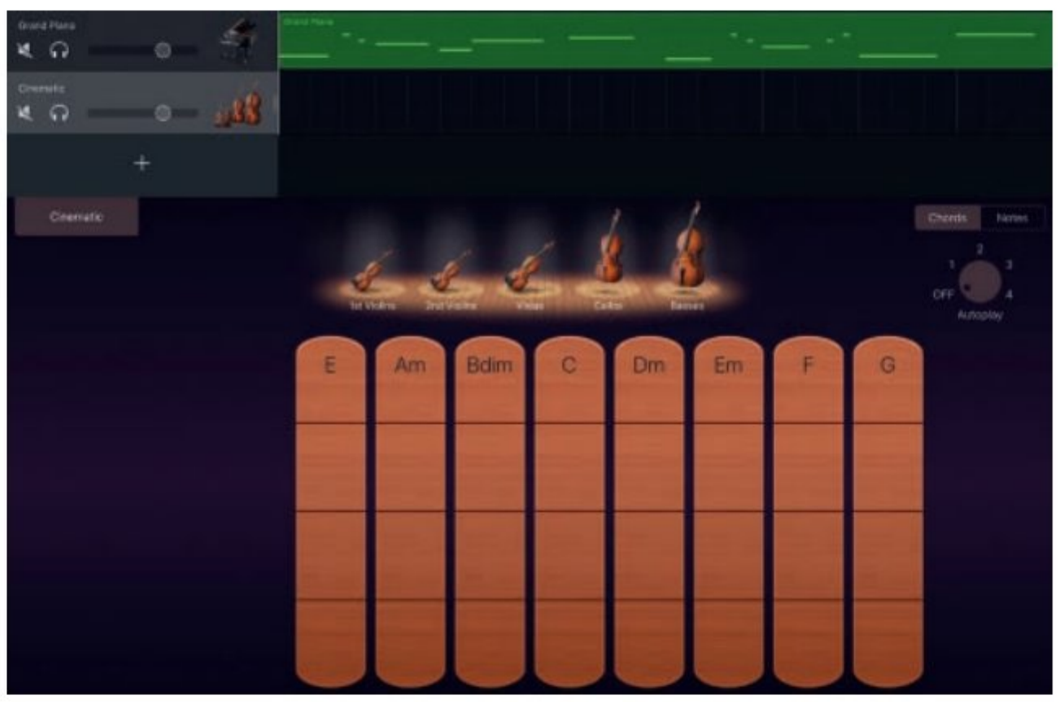


Figure 7.51 GarageBand reharmonisation of 'Bonku's Theme' in A minor

Assessment opportunities

In this activity you have practised skills that are assessed using Criterion B: Developing skills.

! Take action

- ! Find out how gameplay can focus our creativity and imagination into works of art or music.
- ! Explore the process behind the artists and musicians of games when they create new worlds of sound, to communicate with an audience.
- ! Demonstrate the type of gameplay that can bring people together to work towards a common goal. Host and present an event that showcases collaboration through play and imagination.
- ! Host a competition for visual artists, writers and musicians. Ask groups to create a mock pitch for a game that raises awareness of a local issue of social inequality. Make sure that your pitch looks at the application of key skills such as communication, collaboration and creativity. You could invite outside parties or the parents' association to help judge the applicants.

Game score mission

Child of Light and *LUNA – The Shadow Dust*
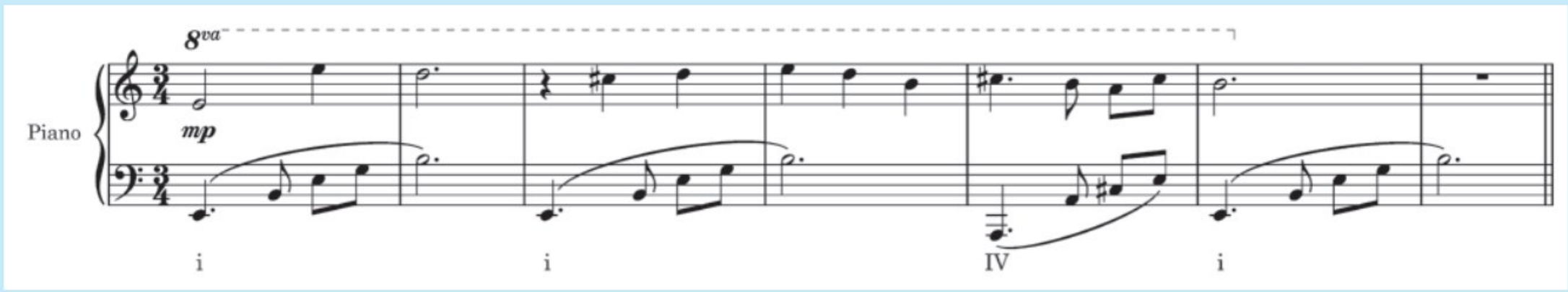
The artwork of both games is unique in its use of shadow, light and colour. *LUNA – The Shadow Dust* is set in a world of magic. It is completely hand drawn and relies on a wonderful score by composer Wang Qian. You can watch the gameplay here: **https://youtu.be/Pj-N42ZPf6I**. *Child of Light*, on the other hand, is first set in Austria in 1895, then in a magical kingdom named Lemuria, with music by Cœur de pirate. The opening *cinematic* (a movie-cut scene) is beautifully narrated through a coloured church window: **https://youtu.be/r09MbuCE5h4**

Listen to LUNA's 'Intro' theme on the playlist and then perform the theme below.

1 What colour comes to you when you hear this theme? Which instruments do you think could play it and build onto that colour?

2 Using software or the performers you have around you, perform LUNA's 'Intro' theme and orchestrate it to reflect the colour you chose. Use techniques that you have heard in all the other works of this chapter so far (arpeggios, motivic development, pedal notes, and so on).

3 Now listen to Aurora's theme from 'Child of Light' on the playlist. Which colours come to you when you hear this theme?



■ **Figure 7.52** Opening theme from *LUNA – The Shadow Dust* by Wang Qian

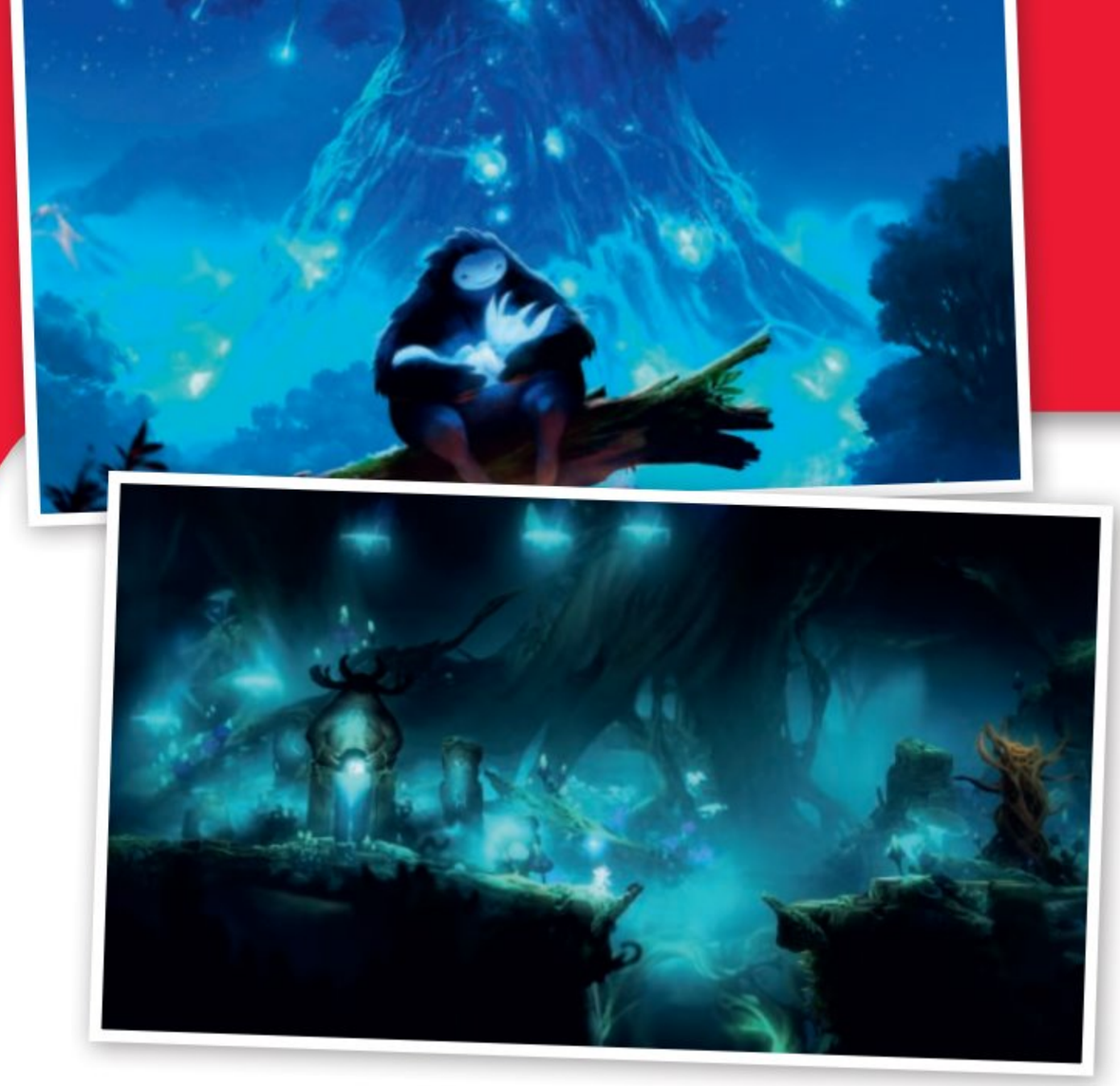


■ **Figure 7.53** *Child of Light* in-game image



■ **Figure 7.54** Press image of *Luna – The Shadow Dust* gameplay

How can art music be turned into game music?



■ **Figure 7.55** 'Ori and The Blind Forrest' press images

ERIK SATIE, FIRST GAME COMPOSER?

Who do you think the first game composer was? We may never know, as many works of the 20th Century art-music tradition can translate very well into game scores. As an example, listen to French composer and pianist Erik Satie's (1866–1925) track 'Gnossienne No.4' on the playlist.

Now draw a graphic map of the sounds you can identify, describing them using words such as *line*, *arpeggio*, *phrase*, *rhythm*, *pattern*, *shape* and *space*. Keep this in your portfolio for the discussion below.

Satie was highly influential in the Parisian avant-garde scene. His music would pave the way for future movements such as minimalism, and even the music of 'Minecraft'.

Satie would actually refer to himself as a *phonometrician* (someone who measures and writes down sounds).

In a 2018 article titled 'Video game music is a wonderful gateway to classical', writer Thomas Quillfeldt compares and contrasts games and works from composers from history.

Michael Hustedde is a violinist with the Videri Quartet, and in regards to a performance of 'Ori and the Blind Forest Suite' composed by Gareth Coker, he commented:

> *"Upon playing through Videri's 'Ori and the Blind Forest' quartet arrangement for the first time, I was immediately hooked by its sonic world. I have also experienced similar sensations while performing Debussy, and feel that echoes of Debussy can be heard in this particular Ori arrangement."*

ACTIVITY: Satie and 'Minecraft'

■ ATL

■ Collaboration skills: Working collaboratively in teams

There are some very strong connections between the French piano music of composer Erik Satie and that of 'Minecraft' composer C418 (AKA Daniel Rosenfeld).

Listen to the track 'Sweden' on the playlist alongside Satie's 'Gymnopédies (1889): No. 1: Lent et douloureux' (**https://youtu.be/315XN6VPi8U**). You will hear an ambient, moving texture in both works that creates a progression for the melody line on top.

Using the piano chord progression of 'Sweden', improvise your own Satie-esque melody over the top. **Use** long note values such as **crotchets** and minims (quarter and half-notes), and stick to chord tones.

If you pair up with a partner, one person can play the chords while the other improvises a melody over the top. This way you can compose and orchestrate your ideas together.

Game score mission

‘Kingdom Hearts III’

Imagine you are a classical instrumentalist. Chances are, you may take lessons for piano, cello, flute, trombone or guitar. Most of the time, if you were looking for game scores to fit your instrument repertoire list, it would be quite difficult. Especially for performance examinations! However, if your game had its score partly made by Skrillex, you may have a chance with this arrangement. ‘Kingdom Hearts III’, developed and published by Square Enix, is a 3D adventure game that merges the storytelling of *Final Fantasy* with characters from the world of Disney.

For this activity, is it best that you listen first to the official track composed for the game by Hikaru Utada and Skrillex entitled ‘Face My Fears’: **https://youtu.be/Kvnwnf9UftA**, then watch the Kaleidoscope Orchestra remix where it is transformed as a live performance: **https://youtu.be/0-V6KL2Pzf0**

1 The opening acts like a *question and answer*, with its rising arpeggio and answering 4-note ostinato. The notes of the ostinato are all from the E major scale, which is the key of the work and fits as it uses chord tones.

2 Using software or a device, enter the bass clef chord progression from the introduction. Then change the notes on top to create your own ostinatos. Remember: Use chord tones, such as the notes of the chords or scales underneath.
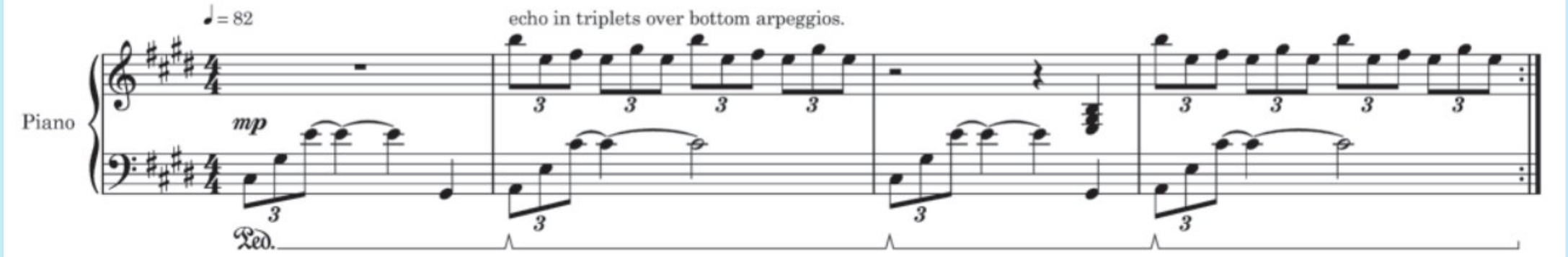


Figure 7.56 ‘Kingdom Hearts’ opening question-and-answer phrases

EXPLANATION GAME

Go to the playlist and once again draw up a structural listening map comparing the Videri Quartet arrangement of ‘Ori and the Blind Forrest’ with Debussy’s ‘String Quartet in G minor Op. 10 movement 3’.

As a class, bring your maps together and take turns expressing your findings **using** the prompts below:

1 **I noticed that… (giving your evidence from your listening maps).**
2 **Why is it that way? or How does it work that way?**

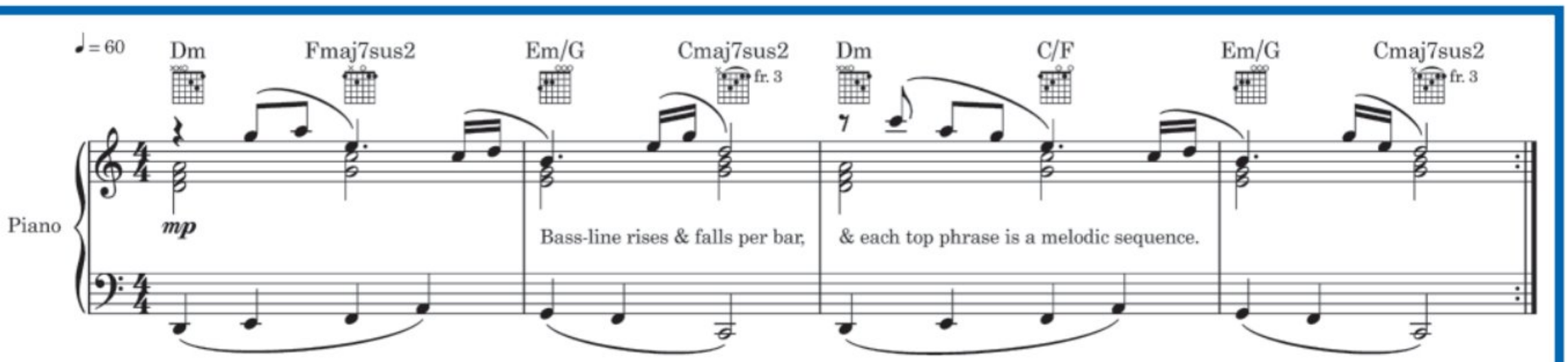


Figure 7.57 ‘Minecraft’ ‘Sweden’ chord progression

Assessment opportunities

In this activity you have practised skills that are assessed using Criterion A: Knowing and understanding and Criterion C: Thinking creatively.

What is ragtime?



■ **Figure 7.58** ‘Cuphead’ press kit

DRAWING ON THE POWER OF NOSTALGIA

Game score mission

‘Cuphead’

‘Cuphead’ was released in 2017 by Studio MDHR. The musical style of ‘Cuphead’, a hand-drawn scrolling game that incorporates jazz, big-band and ragtime, was composed by Kristofer Maddigan. Each track on the album is an incredible reference to the music of early big bands and piano players of the 20th Century. You will find the next three examples on the playlist for study.

1 ‘Tutorial’

This essentially ragtime piano piece fits perfectly into the music you would want as your game’s tutorial section. Most games have an options menu, or stage to learn the controls. What composer Maddigan does here is echoes the writing of Scott Joplin by emphasising chords I and V in the key of D, keeping a steady pulse in the left hand (count 1-2-3), and playing full chords in the right and left hands. The melody is in the top notes of the right-hand chords. Can you sing the melody on its own?

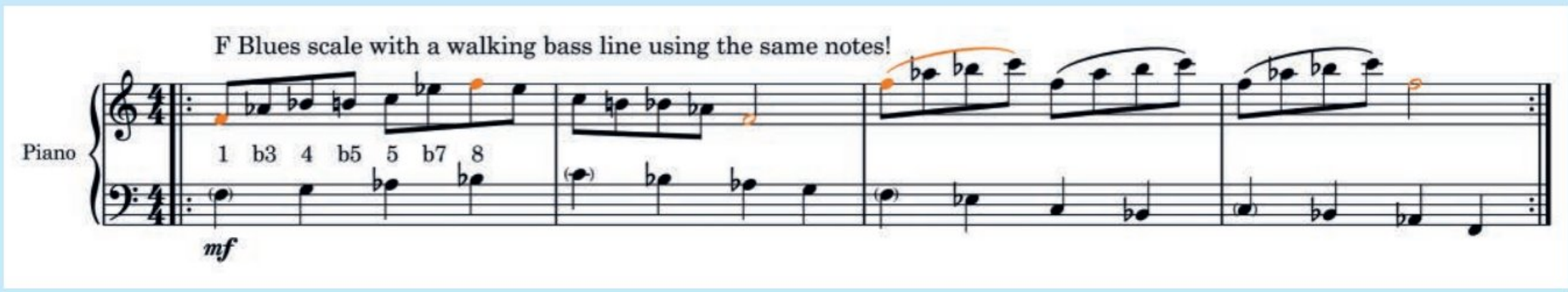
2 ‘Threatin’ Zeppelin’

This is a fast-paced big-band number that can be broken down into two essential phrases, **a** and **b**, based on the F blues scale. The melody is further emphasised by the walking bass line that ascends and then descends **chromatically** back to F.

Try playing the melody on your instrument and pair up with someone who can play / sing the bass line. You can then try playing your own blues scale patterns over the top. The quarter-note pulse (crotchets) provide the foundation for effective syncopation.

3 ‘Floral Fury’

You can view a live rehearsal of this number here: **https://youtu.be/v6h1vM9W2NM**. Maddigan begins this track with a descending melody that is sequenced down a step three times. Each time, it ends with a small ascending fragment rounding off the theme. Try playing this theme on your keyboard or device or entering it into MuseScore – it is fun!



■ **Figure 7.59** What is Ragtime?

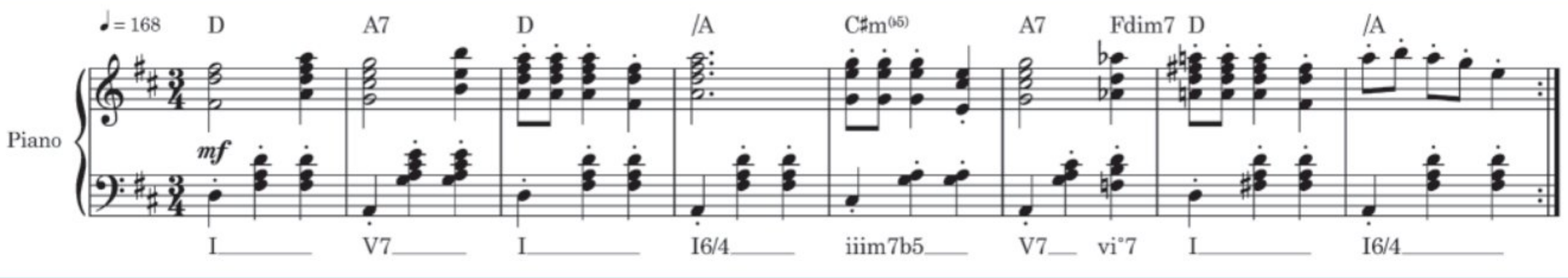
THINK–PAIR–SHARE

Individually research an answer to this section's question: What is ragtime? In your portfolio, document any works, musical notations, melodies or rhythmic patterns to gather evidence for your answer.

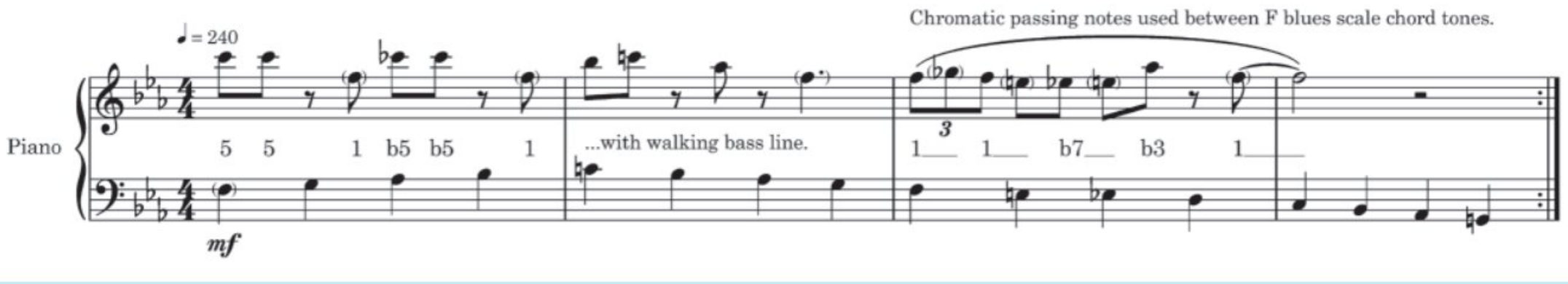
Once you have your research, compare it with a friend or discuss it with the class. What were the defining musical features of *ragtime*?

Ragtime music features a prominent downbeat in the bass, with syncopations in the melody or right hand.
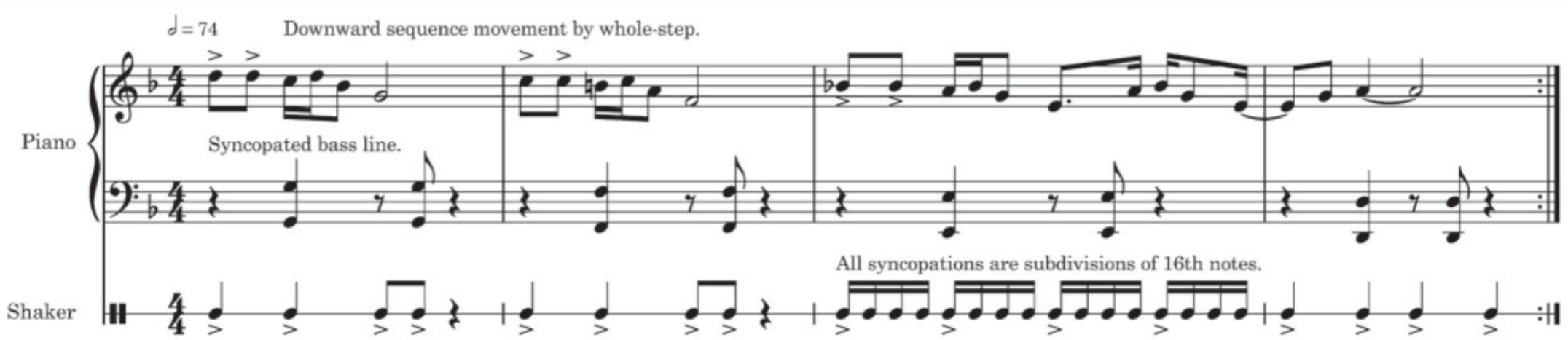
Musical works by Scott Joplin (1868–1917) such as 'The Entertainer' or 'Maple Leaf Rag' influenced many ragtime and jazz musicians, with their harmonic patterns and rhythms. The stage was set to spread ragtime (and consequently jazz) throughout the world in the 20th Century and in the mid-1930s; with the big-band swing music of Benny Goodman and Duke Ellington, to name but two leaders, composers and **arrangers** began writing parts for instruments that built on the syncopated structures of ragtime.



■ **Figure 7.60** 'Tutorial' chords and melody



■ **Figure 7.61** 'Threatin' Zeppelin' with walking bass line



■ **Figure 7.62** 'Floral Fury' melodic sequence with percussion

These examples should have you moving towards an instrument and forming ideas of how diverse the role of a game-score composer is. Find out what works for you and get playing!

Is gaming good for creativity?



■ **Figure 7.63** Game over from 'Dandara' for iOS

Reflection

In this chapter we have **explored** different games, musical styles and methods for composing to games. The chapter has focused on your playing and **formulating** individual ways of expressing fear, joy, hope, nostalgia, as well as abstract notions of colour. By **comparing** and **contrasting** different techniques of loop creation, orchestration and theme writing, you will have acquired a broad range of skills that now places you in the role of creator and sound-designer. You can now approach games with understanding, **analysing** their scores and communicating similar musical techniques. Don't forget to **outline** whatever you discover and share it within your portfolio; this will become your go-to place for recording your journey.

SOME SUMMATIVE OPTIONS TO TRY

Use these ideas to apply and extend your learning from this chapter. These problems can be assessed using any of the suggested strands above the summative activities. The presentation and portfolio requirements are given after the description.

THIS TASK CAN BE USED TO EVALUATE YOUR LEARNING IN CRITERION B AND CRITERION C (ALL STRANDS).

SUMMATIVE 1

Plan, prepare and document your own *mock* computer game. Draw up the storyline, protagonists, how you would **use** colour and animation and, finally, how you would score the music from the tutorial page to the end credits. Your goal is to show sketches of themes, recordings of different ideas and how you **developed** these for the game. Warning: You do not need to score an entire computer game!

Presentation and portfolio

Present the following items as part of this summative task.

1. **A musical roadmap detailing the themes for your game, the instrumental / sound palette you chose and then how you would develop each theme, with short examples**
2. **Utilise different forms of technology to show motivic development, orchestration and connection to artwork, personal expression or other events in the storyline**
3. **Sketch your process on a timeline showing discussions and games played as research.**



■ **Figure 7.64** Game plots and their structures are excellent examples for 'road-maps'

THIS TASK CAN BE USED TO EVALUATE YOUR LEARNING IN CRITERION A AND CRITERION D (ALL STRANDS).

SUMMATIVE 2

Develop a presentation that **outlines** the comparison of a game score to composers of other time periods in history. The goal is to outline the musical connections between composers from different time periods, showing their use of similar compositional techniques as storytellers and communicators.

Presentation and portfolio

It can be **presented** as a podcast with audio comparisons, an essay with notation, or a live demonstration called a *viva voce*. This is where you play examples on the instruments yourself, speaking to the audience.

Set yourself a time limit (10 minutes is good), choose two composers (one from the past and one current game composer) and collect evidence showing similarities in their works.

Hint

GarageBand and SoundTrap are excellent for making podcasts.



Figure 7.65 'HyperLight Drifter' would be a great place to start, and we have looked at the music of Disasterpeace in previous chapters

Portfolio presentation

Documenting and sharing

This chapter sought to provide you with ways to identify, develop and transform your musical ideas, as well as what it means to orchestrate them, with or without technology. By continually looking through a lens of play and discovery, you will be able to take this same approach to any game, or musical score, that you encounter in the future. This way you can interact with them as both audience member and a confident creator.

Use this table to reflect on your own learning in this chapter.

Questions we asked	Answers we found	Any further questions now?
Factual: What is a game score? What is sound design? What is ragtime? What is a *leitmotif*?		
Conceptual: How does game play connect to the idea of making art? How does a palette of sound communicate meaning to an audience? How can art music be turned into game music? When are game scores more than just loops?		
Debatable: Are game scores the last bastion of good melody-writing? Is gaming good for creativity? To what extent does a leitmotif communicate the storyline?		

Approaches to learning you used in this chapter:	Description – what new skills did you learn?	How well did you master the skills?			
		Novice	Learner	Practitioner	Expert
Collaboration skills					
Organisation skills					
Media literacy skills					
Creative thinking skills					
Learner profile attribute	Reflect on the importance of balance for your learning in this chapter.				
Balanced					

8 Do machines make music?

Different **genres** of music combine technical and **aesthetic** **innovations**.



Figure 8.1

CONSIDER THESE QUESTIONS:

Factual: What is electronic music? What is an ADSR envelope? What is synthesis? What is a vocoder? Which structures exist for deconstructing and understanding electronic music?

Conceptual: How does rhythm define a genre? How has electronic music brought innovation to creating and performing? How do complementary patterns work with chords? How can acoustic and electronic sounds be combined creatively?

Debatable: Is playing programmed electronic instruments cheating? Would past composers have used electronic media and its tools?

Now **share and compare** your thoughts and ideas with your partner, or with the whole class.

IN THIS CHAPTER, WE WILL…

- **Find out** how music has evolved and how artists have innovated with both musical structures and electronic sounds.
- **Explore** different genres, tools and techniques of electronic music, analysing their components so we can break them down and experiment with them ourselves.
- **Take action** to perform, record, discuss and create our own electronic and acoustic works that demonstrate technical and artistic innovation.

These Approaches to Learning (ATL) skills will be useful…

- Organisation skills
- Reflection skills
- Information literacy skills
- Creative thinking skills
- Transfer skills

Assessment opportunities in this chapter:

- Criterion A: Knowing and understanding
- Criterion B: Developing skills
- Criterion C: Thinking creatively
- Criterion D: Responding

We will reflect on this learner profile attribute…

- Knowledgeable: We develop and use conceptual understanding, exploring knowledge across a range of disciplines. We engage with issues and ideas that have local and global significance.

Prior knowledge

This chapter works on the premise of including all levels of learners. You will find it useful to know:

- how to play and work with scales, modes, chords, bass lines, riffs or ostinatos
- how to play and identify rhythms and structures aurally, from notation and in performance
- how to work collaboratively to express musical ideas with body percussion, voice, instruments and new forms of technology
- what working within an ensemble means for balance and intonation, but also communication and expression
- ways of analysing music using pitch, duration, texture, structure, tone-colour, dynamics and expressive techniques to document the fingerprints of a style or artist / composer
- how to approach rehearsing, experimenting and presenting musical ideas from research and analytical listening.

Examples, links and referenced materials will guide you further.

KEY WORDS

sample
scales
structure
synthesiser
producer
acoustic
ADSR
oscillator
frequency
equaliser
modulation
LFO (low-frequency oscillator)
additive
subtractive

Links to: Dance; Business Studies

Dance can be integrated to develop an approach that is tied to rhythmically defined genres and choreography.

The model of implementing these changes and developing a music business, band or studio could outline a very creative unit in Business Studies that focuses on profit / non-profit projects such as the summative example *Guide to the Birdsong of South America.*

THINK–PUZZLE–EXPLORE

This chapter will compare and contrast genres of *electronic music*, with innovations from both the past and future. It will inquire into techniques and structures that can be used to **create** and deconstruct music now.

1 **Open your portfolio and brainstorm ideas around the question: Do machines make music? As you think about your response, write the names of artists, composers, DJs and producers that come to mind.**

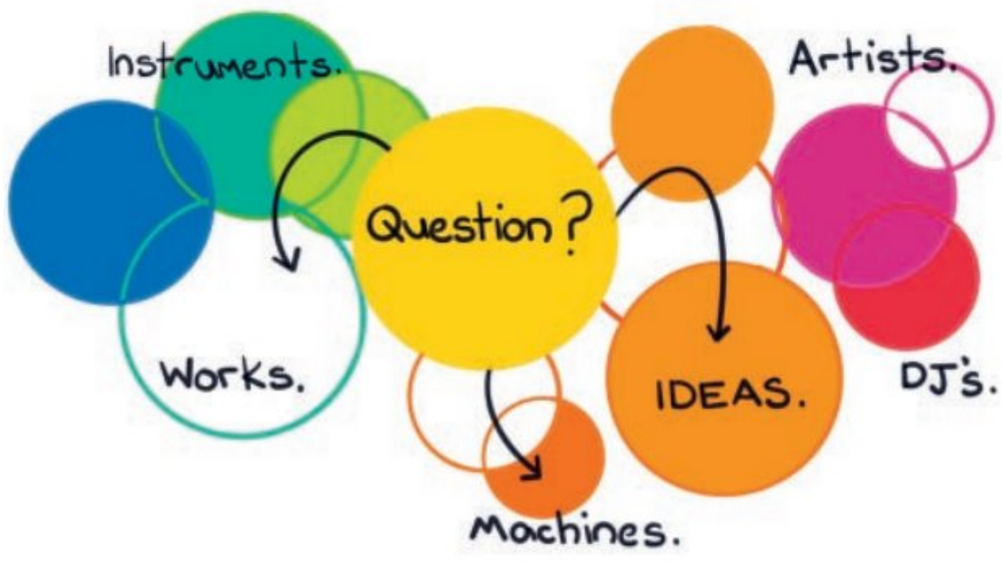


Figure 8.2 Use concentric circles to brainstorm this question

Watch Vox's mini-documentary on the origins and **development** of a musical sample called the *Orchestra Hit*: **https://youtu.be/8A1Aj1_EF9Y**

Did you notice the mixture of live performance and technology?

2 **Add to your portfolio brainstorming a new series of ideas using the question: What questions or puzzles do I have about *machines* and *music* now?**
3 **Add a few more circles of brainstorming to your portfolio to answer the question: How can I explore this topic further?**

What is electronic music?



■ **Figure 8.3** Synth One and Helm side by side playing a sine wave

BLEEPS, BLOOPS AND SWEEPING SOUNDS

From this chapter onwards, different types of creative tools will be referenced to help you on your musical journey. You may have devices, laptops or pencil and paper. When you engage with a mission, the following tools are highly suited for creating and performing.

- **GarageBand** is an all-in-one audio and midi-digital workstation for MAC and iOS.
- **SoundTrap** is an online music production suite with synth instruments, loops and audio import features.
- **Helm** is a synthesiser for MAC and Windows with which you craft new sounds.
- AudioKit **Synth One** for iOS and Android is a free synthesiser that fits into your pocket.

Remember, balancing your technology use with physical instruments and singing, will always build your understanding of how music works.

SEE–THINK–WONDER

Forbidden Planet (1965) was the first major motion picture to feature an entirely electronic film score. It was **created** by team Louis and Bebe Barron, and was an incredible feat of creativity, determination and innovation. Having been gifted with one of the first tape recorders in 1948 from Germany, the Barrons began experimenting with the genre of electronic music before there was even a label for it.



■ **Figure 8.4** *Forbidden Planet*

The idea of the film came from graphic artist Irving Block in 1945, and MGM Executive Producer Dore Schary found the project a good match for the Barrons' talents. The story of *Forbidden Planet* '… had a different slant and a different villain – not a creature or a humanoid with an odd look but rather a psychological villain, the beastly id of a rational man that ultimately destroys him'.



■ **Figure 8.5** The Barrons in their studio
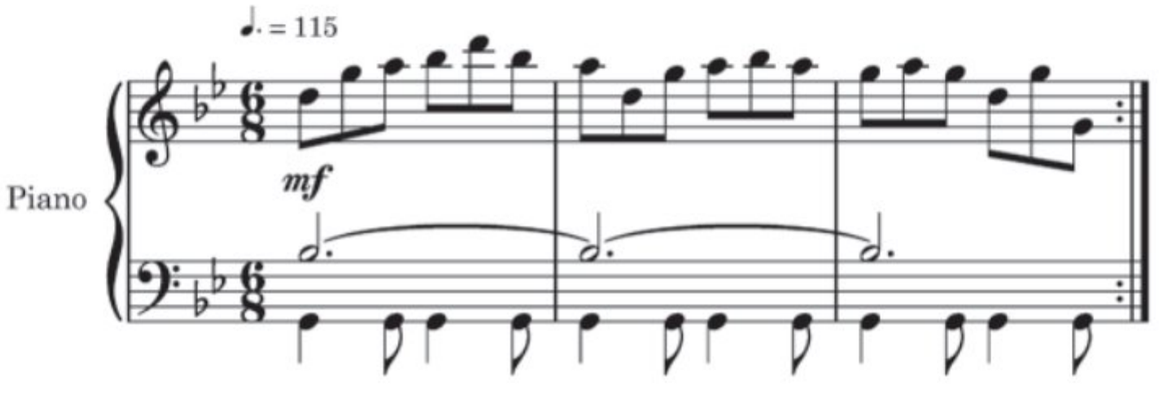
Listen to 'Main Title (Overture)' for *Forbidden Planet* on the playlist, and in your portfolio answer the following questions:

1. **What do you hear? (Try to use the IDEA scaffolding to help you write a detailed response.)**
2. **What do you think about the sounds and innovation displayed by the two composers?**
3. **What does it make you wonder about electronic music and its future?**

Listening strategically: Get an IDEA

Listen to the track 'Suite Bergamasque, Claire de Lune, No. 3' by Isao Tomita. As you listen, what sounds or patterns can you **identify**? **Describe**? **Explain**? **Analyse**?

The 1974 album is an electronic *reinterpretation* of Claude Debussy's **tone poems**, performed entirely on a Moog modular synthesiser. How would you describe the **tone-colour** changes in this excerpt?



■ **Figure 8.6** 'Oxygène Part 2' top ostinato, pedal note and bass line

ACTIVITY: Making electronic music

■ ATL

- Creative thinking skills: Practising visible thinking strategies and techniques
- Organisation skills: Selecting and using technology effectively and productively

> *"I probably spend more time with machines than with human beings, and it takes time to tame them"*
>
> *Jean-Michel Jarre*

Jean-Michel André Jarre (b. 1948) is a pioneer in the electronic, ambient and electronic music world. His performances step up to a grandiose level to include lasers, fireworks and, yes, synthesisers. His 1976 album *Oxygène* is a combination of musical ideas that we have seen in previous chapters; the difference is the electronic elements. Listen to 'Oxygène, Pt. 2' on the playlist and let us start examining it, alongside the transcribed example of Figure 8.6.

1. **The opening 6/8 ostinato and pedal note on 'g' establishes the initial structure of the piece. However, there are many sounds surrounding these musical building blocks.**
 - a **Using your portfolio and listening skills, copy Figure 8.6 and draw symbols and lines above it to represent the electronic elements heard on the playlist.**
 - b **On a device or real instrument, perform the 3-measure ostinato and bass line.**
2. **Transfer your performance to one of the synthesisers mentioned at the beginning of this chapter. Can you experiment and find sounds similar to Jarre's recording by altering the parameters in those programs?**

The future, according to Jarre '… could be quite dystopian, or we can succeed to **create** a kind of balance between the demography, the ecology and our relationship with technology'. Listen to him speak about his project *Equinox Infinity* at his website: **https://jeanmicheljarre.com/music/equinoxe-infinity**

◆ Assessment opportunities

In this activity you have practised skills that are assessed using Criterion A: Knowing and understanding and Criterion B: Developing skills.

ACTIVITY: Remixing Mozart

ATL

- Organisation skills: Set goals that are challenging and realistic

Clean Bandit is a British electronic-pop group who have found a musical blend between the techniques of classical music and technology. The group released their hit EP 'Mozart's House' in 2013, which actually includes sections from Amadeus Mozart's 'String Quartet No. 21 in D Major'. Listen to their track on the playlist and complete this activity:
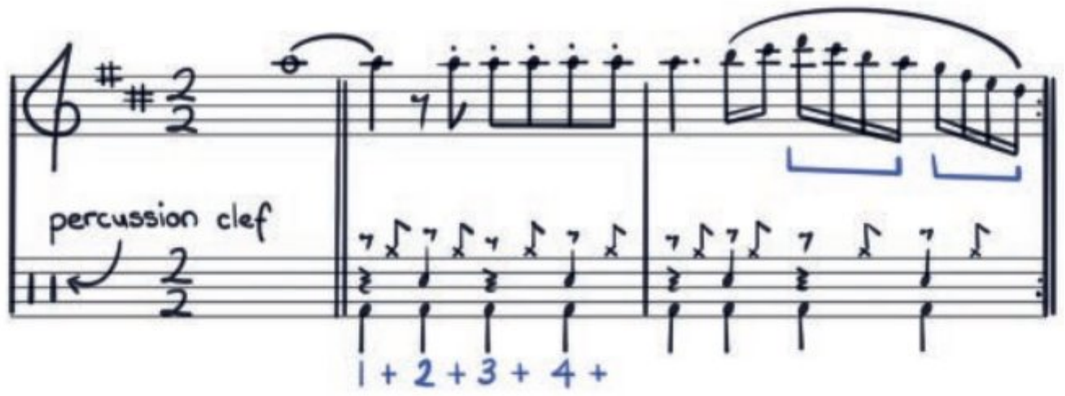


Figure 8.7 Mozart's motif with drum-kit pattern

The measures of Mozart's 'String Quartet' were most likely chosen for their ability to repeat in a set structure. At 2'–2'35 into the track, you will hear the strings playing Mozart's work alone, then a drum kit is brought in over a 2-measure **motif** in D major with added *filter* effect:

1. **Using an acoustic or electronic instrument, play this motif (which is just a D major scale).**
2. **Using any drums or percussion you have, perform the standard *four-to-the-floor* drum pattern with the 2-measure loop.**

What else can you add, possibly in the style of Jean-Michel Jarre?

Assessment opportunities

In this activity you have practised skills that are assessed using Criterion B: Developing skills and Criterion D: Responding.

Listening strategically: Get an IDEA

Listen to the track 'Insane' (feat. Moon Holiday) by Flume off of his album *Flume (Deluxe Edition)*. As you listen, what sounds or patterns can you **Identify**? **Describe**? **Explain**? **Analyse**?

Use the clicking sound as a way to count the beats and find new ways of describing the **syncopation** and how the **chords** provide **rhythm**.

EXTENSION

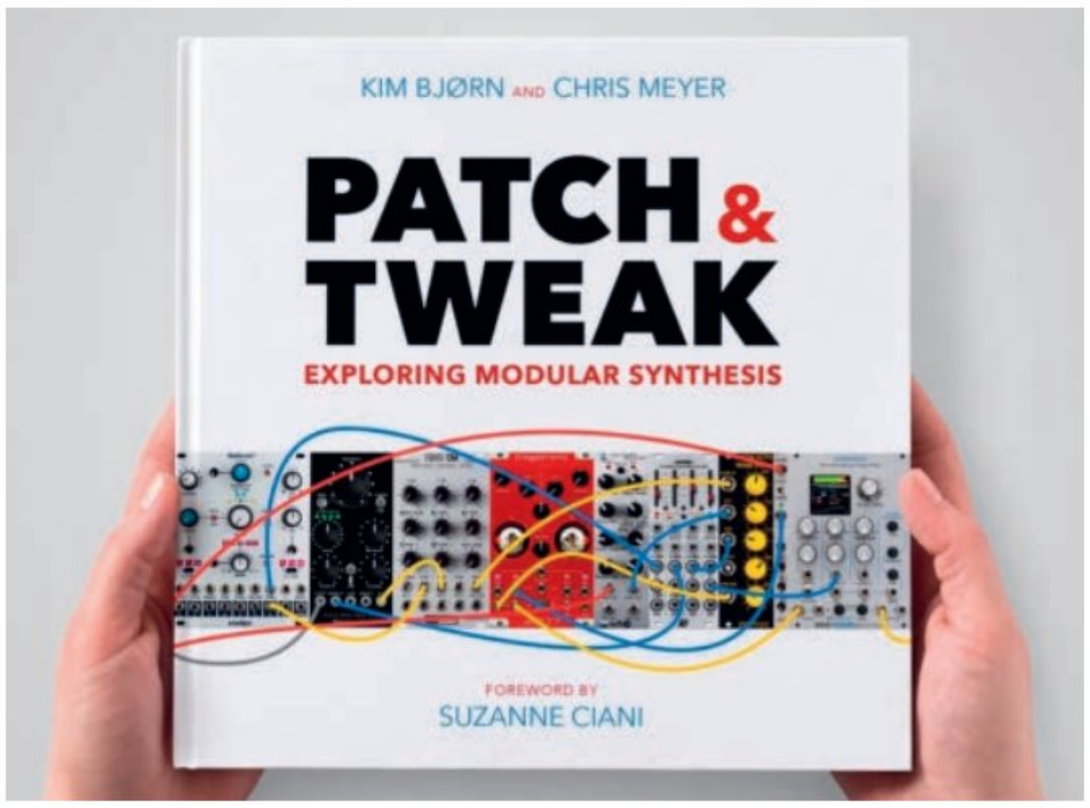
Getting started with synthesis

Music is a language with a specific vocabulary. In the same way, synthesis requires knowledge of its basic structures. Ableton Live is a DAW (digital audio workstation) that many artists, DJs and performers use, from live performances to remixes. Ableton have **developed** an interactive tutorial at **https://learningsynths.ableton.com** that will have you building sounds and learning electronic vocabulary. Have your portfolio ready to sketch and document what you discover.



Figure 8.8 Synthesis tutorial from ableton.com

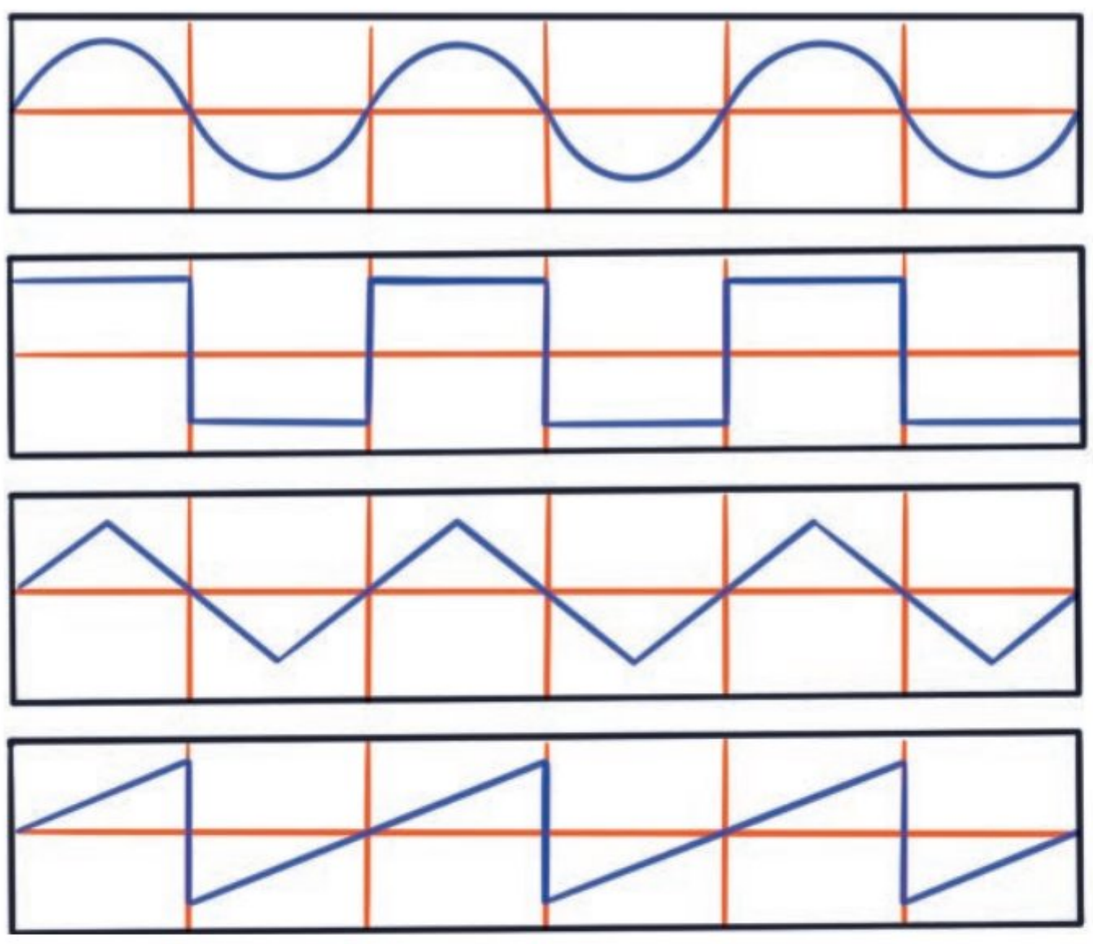
What is an ADSR envelope?



■ **Figure 8.9** Learn more than ever with the book *Patch & Tweak* by Kim Bjørn and Chris Meyer, published by BJOOKS

BECOMING INNOVATIVE

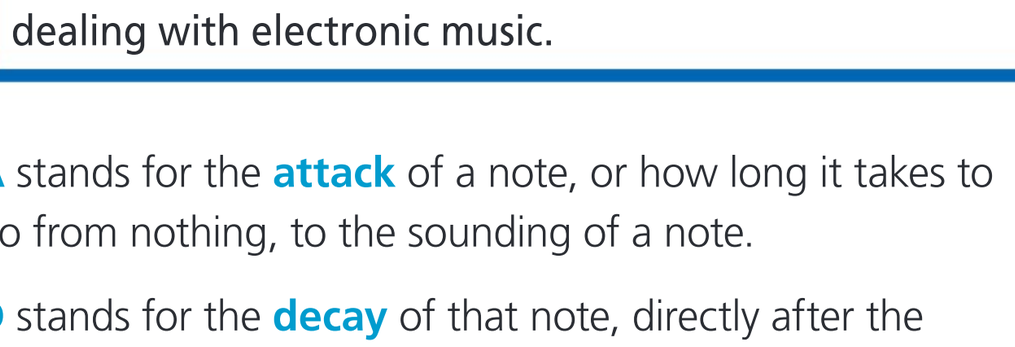
Instruments that we learn to play and interact with all produce their sound from vibrations moving through the air. These vibrations will then move in certain waves depending on their **pitch** (frequency) and *volume* (amplitude). For electronic instruments to generate sounds that mimic acoustic ones, we use generated waves of certain shapes with an *envelope*.



■ **Figure 8.10** Four sound-wave types (sine, square, triangle, sawtooth)

CONNECT–EXTEND–CHALLENGE

Here are two ADSR envelopes **created** in Synth One on the iPad. Draw these into your portfolio and describe their sounds (or possible instruments) **using** the acronym ADSR.



■ **Figure 8.12** ADSR envelopes from Synth One

Discuss your answers with a friend and then write a short description of the following:

1. **How are the ideas presented connected to what you already knew?**
2. **What new ideas did you get that extended your thinking in new directions?**
3. **What questions or puzzles still challenge you about envelopes or using them?**

Understanding that an instrument such as a guitar has a quick attack to short release, and a bowed instrument like a violoncello has a slower attack but longer release, are both important concepts when dealing with electronic music.

A stands for the **attack** of a note, or how long it takes to go from nothing, to the sounding of a note.

D stands for the **decay** of that note, directly after the attack, going to the sustain level.

S stands for how long the level of amplitude is **sustained** (while the key is pressed, for example).

R starts as soon as the key is **released**, dropping to zero volume.

For example, a dog barking has an immediate attack, a quick decay, short sustain and quick release.



■ **Figure 8.11** ADSR envelope of a dog barking in GarageBand's sampler

ACTIVITY: Activating musical lines

ATL

- Information literacy skills: Evaluating and selecting information sources and digital tools based on their appropriateness to specific tasks
- Transfer skills: Applying skills and knowledge in unfamiliar situations

Evangelos Papathanassiou (b. 1943), also known as *Vangelis*, is famous for his style of *symphonic electronica*. His album *Albedo 0.39* (1976) is a concept album, inspired by the idea of a planet's *albedo*; which is the proportion of the light it receives that is reflected back into space. Listen to the track 'Alpha' on the playlist and get **creating** with the instructions that follow:

1 **The opening features a *question-and-answer* phrase that repeats. Beneath as a structure, an 8-measure chord progression changes slowly using arpeggios. This technique is something we will come to see in many exemplary electronic works.**
2 **Play the arpeggios as written to a steady pulse. Then organise a group to sing / play the melody on top.**
3 **One of Vangelis' orchestration techniques is to layer the work as it progresses. This is why it is important to leave space, and not fill every rhythmic grouping or layer straight away.**
4 **Now, find synthesised sounds that you can perform as a class *electronic orchestra*. Use the Vangelis' parts and audio as your reference point.**

Hint

GarageBand's Alchemy synth and SoundTrap's instruments will work very well as *live performance* instruments.

Assessment opportunities

In this activity you have practised skills that are assessed using Criterion A: Knowing and understanding and Criterion B: Developing skills.

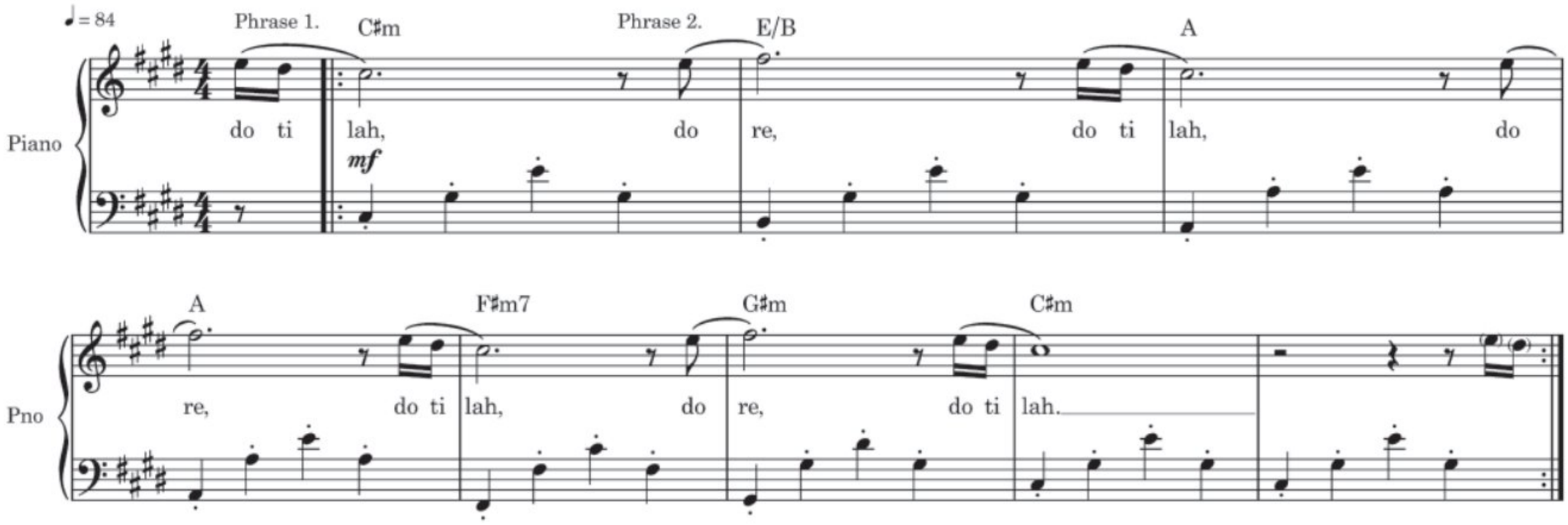


Figure 8.13 'Alpha' deconstructed Part 1, with solfeggio
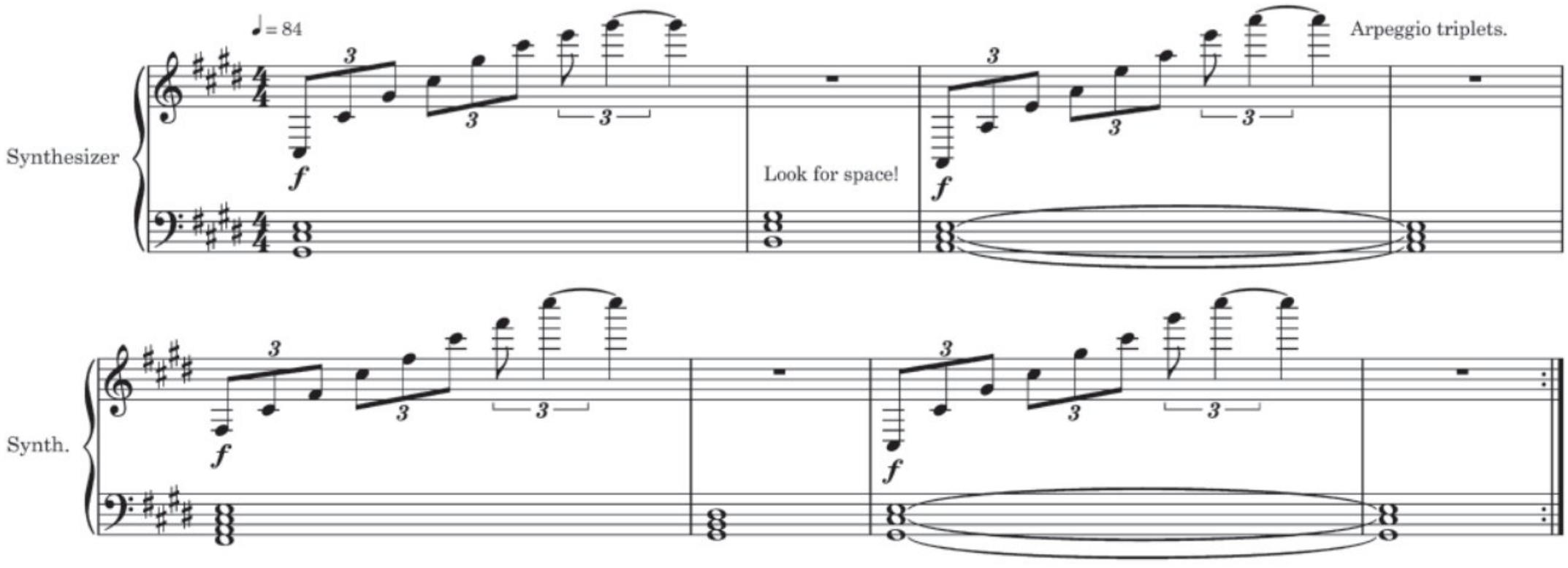


Figure 8.14 'Alpha' deconstructed Part 2. Look for the 3-octave ranged arpeggio!

Listening strategically: Get an IDEA

"The orchestra is the world's greatest synthesiser!"
Mason Bates

Mason Bates (b. 1977) is known for his innovative orchestral writing, jazz elements, techno rhythms, DJ performances and integrating electronic sounds into the symphony orchestra. Listen to his work entitled 'Attack Decay Sustain Release' (2013) on the playlist.

In your portfolio, keep a short list or draw a graphic map of the different groups of patterns that you hear. There are sections that are marked by changes in short to long sounds (changes in attack and release), as well as layers moving across each other.

ACTIVITY: The riff from 'Rather Be'

ATL

- Reflection skills: Demonstrating flexibility in the selection and use of learning strategies

'We try not to see boundaries between genres. We believe you can just do whatever you want,' says Jack Patterson, multi-instrumentalist of Clean Bandit.

Clean Bandit's track 'Rather Be' (2014) has a signature, melodic riff. This riff, or *hook*, is played an octave apart on a synthesiser.

To get this sound, synthesisers use *oscillators* to generate sine waves like an acoustic instrument. You can layer two of them, one octave apart, and then edit the ADSR envelope to get that 'Rather Be' sound.

Try editing your own settings with SoundTrap, or Synth One, as you play the melodic hook.



Figure 8.16 'Rather Be' two oscillators an octave apart + ADSR diagram in SoundTrap and Synth One

Assessment opportunities

In this activity you have practised skills that are assessed using Criterion B: Developing skills.
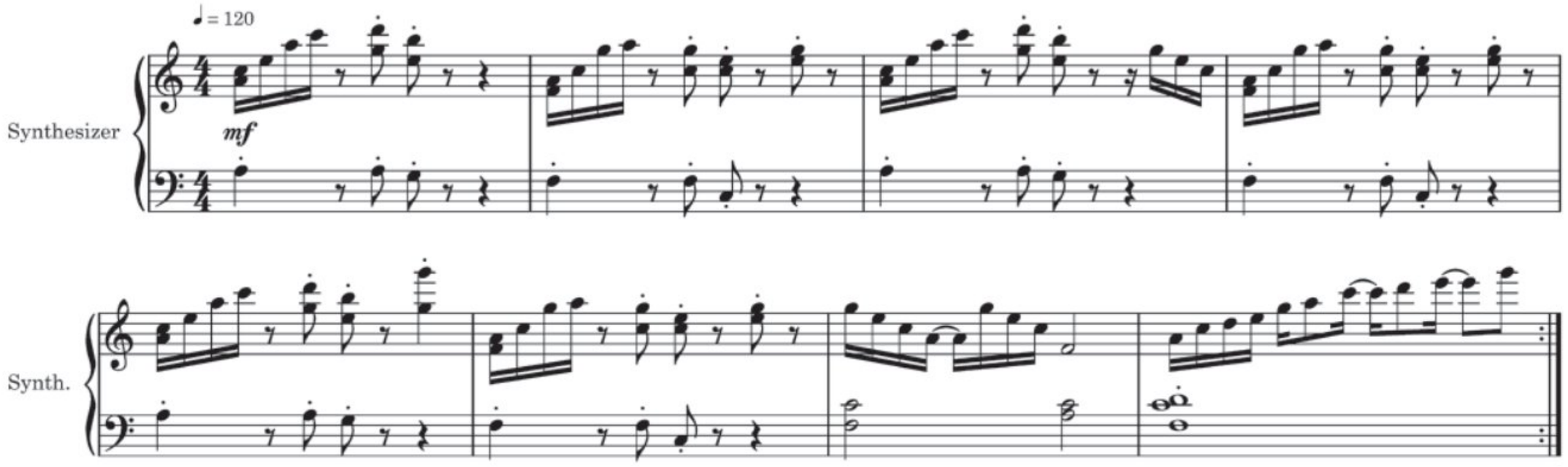
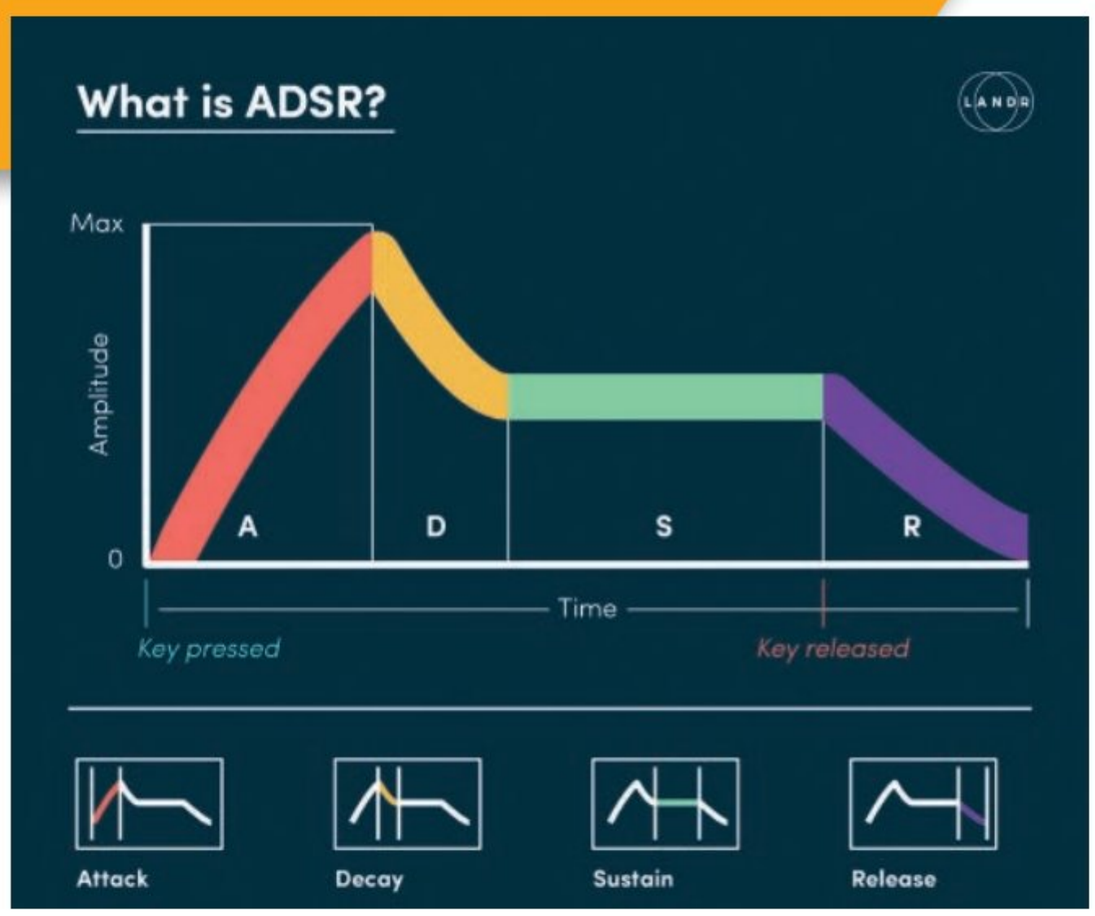


Figure 8.15 'Rather Be' measures 1–2 repeat with little variation until measures 7–8

What is synthesis?



■ **Figure 8.18** Delia Derbyshire with Workshop co-founder Desmond Briscoe in 1965



■ **Figure 8.17** Envelope infographic. Source: www.landr.com



■ **Figure 8.19** Brian Hodgson used a piano string to create the 'Tardis sound' from the *Doctor Who* TV series

SYNTHESISERS AND SOUND DESIGN

The BBC Radiophonic Workshop is a story of determination, creativity and innovation. Being tasked with creating new sounds when your equipment consisted of 'old tape recorders and a few pieces of test equipment that could make noises…' is very different from today. Musical devices today can record a sound, place it onto a musical keyboard, add effects and then post it online. This did not exist back in 1958. Therefore much of the Radiophonic Workshop's output was produced by using the techniques of **musique concrète**. This is where you record naturally occurring sounds and manipulate them on pieces of tape by cutting it, changing the pitch, reversing the tape or rerecording it in a long room for a reverb effect.

For example, the *Doctor Who* theme was first developed at the Workshop in 1963 by Ron Grainer and Delia Derbyshire. Derbyshire was an extremely creative composer. She had a library of electronic music recorded under her own name and with the band White Noise.

Then there was Brian Hodgson, who discovered scraping a key against a piano string, recording it to tape, reversing it and layering with other effects could create the sound of a time-travelling space ship!

THINK–PAIR–SHARE

In your portfolio, **think** and write short responses to the following prompts:

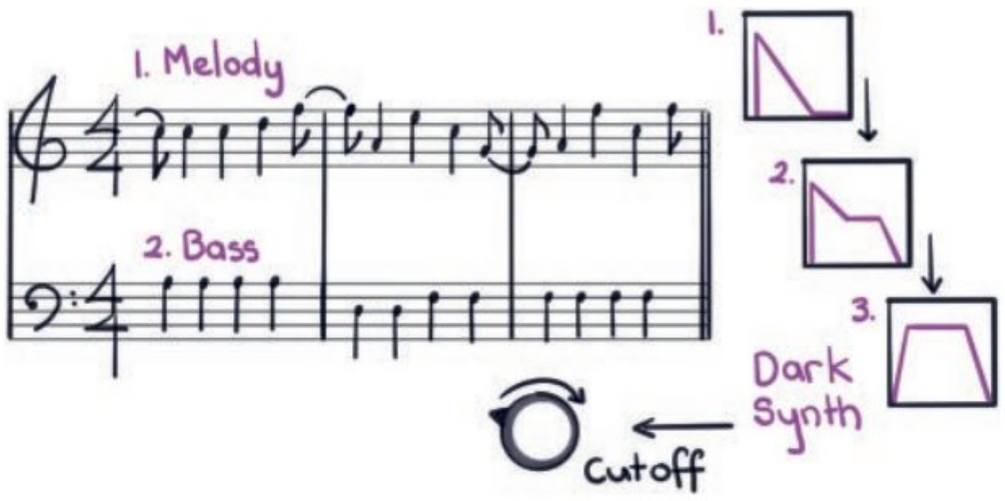
1. **How would you create your own sounds for a television show using musique concrète techniques?**
2. **What equipment could you use to create 'other-worldly space' sounds today?**

Pair with a partner, or **share** as a class, and have a discussion on the process of recording and editing sounds to **create** music. What solutions or workflows can you come up with? Do you know of any artists or producers that use these techniques today?

Listening strategically: Get an IDEA

Listen to the track 'Strobe' by deadmau5 from his 2008 album *For Lack of a Better Name*. As you listen, what sounds or patterns can you **Identify**? **Describe**? **Explain**? **Analyse**?

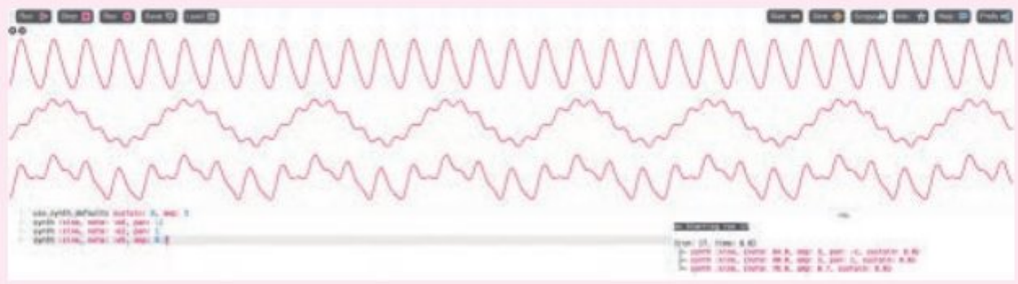
Use the structural wave-form diagrams provided to add answers to your portfolio that connect with the structural events of the track.



■ **Figure 8.20** 'Strobe' by deadmau5 structural wave-form diagram: another way to visualise and analyse music!

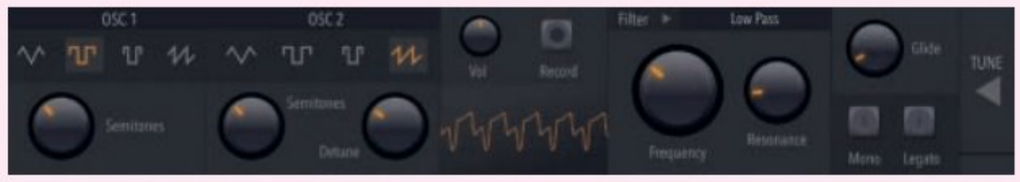
Music exploration: Synthesis (part 1)

Additive synthesis is fun to work with as it builds on the premise of adding sound waves. Remember SonicPi from Chapter 1? Here we can use coding to visualise adding sine waves together:



■ **Figure 8.21** Additive synthesis with three different sine waves

Using the synthesiser instrument in SoundTrap, or Synth One, you can add two sine waves together using the oscillators. The *Semitones* (half-step) or *Coarse* dials allow you to transpose the waves by **interval**. Try to mimic the image below.



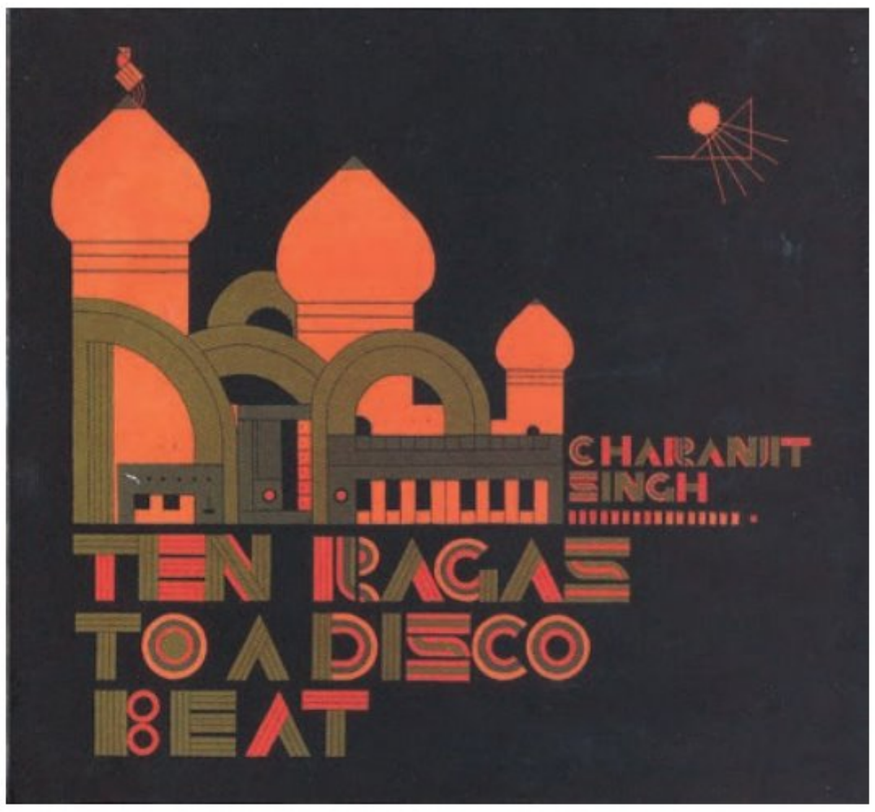
■ **Figure 8.22** Additive synthesis with Synth One for devices (square + sawtooth waves)

Additive synthesis allows you to draw down every knob and level to zero. You then build your sound from the foundational waves – upwards. Best of all, there is no right or wrong 'addition' – you can use any wave type; just wear headphones!

Portfolio presentation

Raga and electronics

Indian music has a defining set of musical characteristics that distinguishes it amongst the music of the world. From the set melodic forms called ragas to the time-cycles called **talas**, Indian music of the North and South has a rich tradition of pattern, structure and improvisation. What if you could perform these same characteristics with electronic hardware or software? In a blog post entitled 'Raga and Electronics: A Brief Introduction' (**www.ableton.com/en/blog/raga-and-electronics-brief-introduction**), you can learn about Indian rhythmic forms, drone instruments and the 1982 album *Synthesizing: Ten Ragas To A Disco Beat*, which you can listen to on Spotify.



■ **Figure 8.23** *Synthesizing: Ten Ragas To A Disco Beat* by Charanjit Singh (1940–2015)

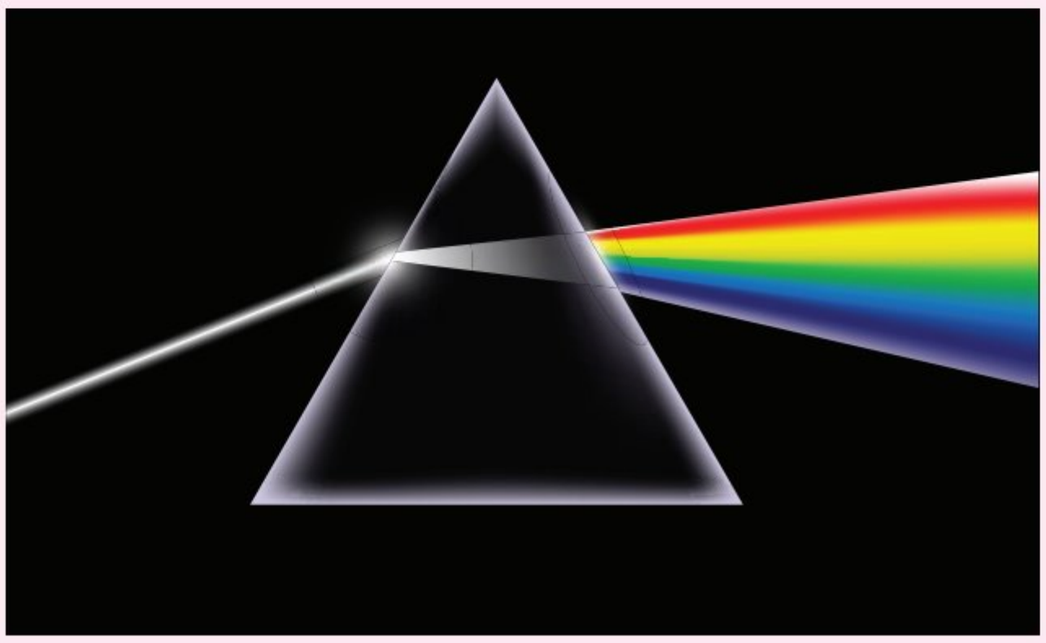
Which structures exist for deconstructing and understanding electronic music?



■ **Figure 8.24** Filters with envelopes

Music exploration: Synthesis (part 2)

Subtractive synthesis, works in the opposite direction from additive synthesis. Sound waves all have what are called *higher frequencies*, or *harmonics*, that exist above their fundamental (the note being played). Imagine it is like the light experiment, where white light through a prism demonstrates the spectrum of colour in a single beam of light.



■ **Figure 8.25** Light spectrum represented in Pink Floyd's 1973 album *The Dark Side of the Moon*

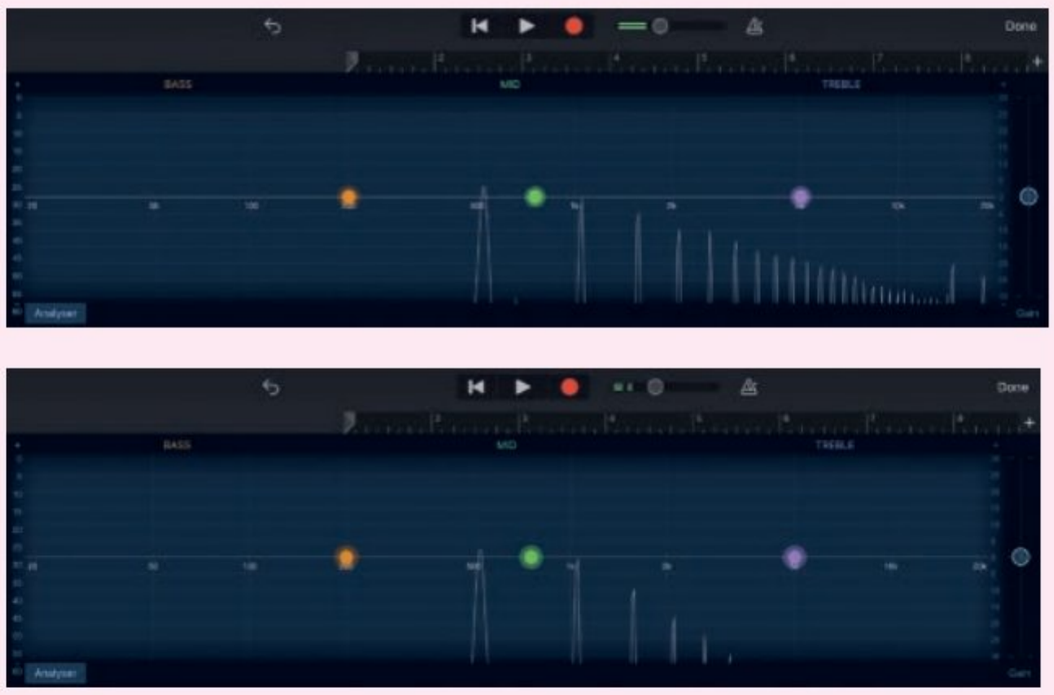
Subtractive synthesis takes these harmonics out using what is called a *low-pass filter* (*LPF*) and the *filter ADSR envelope*.

In the following images look for the image of the sound presented. In each you will notice a change in the wave form or a reduction of higher frequencies.



■ **Figure 8.26** Synth One examples with no filter, then filter applied

In GarageBand on iOS, for example, you can choose a synthesiser preset, then with the analyser on top see what happens when the *Resonance* or *Cutoff* is dialled back to zero. The upper frequencies just disappear, leaving a smoother tone.



■ **Figure 8.27** GarageBand subtractive synthesis examples back to back

Try this yourself within the music software you have, and research more additive and subtractive synthesis examples online.

STRANGER SYNTHS

ACTIVITY: Stranger sounds

ATL

- Information literacy skills: Understanding and using technology systems
- Transfer skills: Inquiring in different contexts to gain a different perspective

"You get into the studio and experiment."

Michael Stein

The music of the Netflix series *Stranger Things* was **created** by duo Kyle Dixon and Michael Stein of the electronic band Survive. Utilising synthesisers and improvisation, the team produced iconic tracks for the TV series, including the titles 'Kids' and the 'Demogorgon' theme (featured in 'The Upside Down' at 2'15).

After listening to the tracks above, we will deconstruct the musical components for both tracks and then part of their electronic components. Figure 8.28 'Kids' is layered from a single ostinato and 2-phrase melody that is uniquely out of sync with the bar lines. This gives the piece forward movement while the chords still fall on the first beat of each measure.

1. **Perform these parts into GarageBand or SoundTrap as individual tracks and / or layers.**
2. **Listen to the track again, and this time draw small ADSR diagrams for the chords, bass notes and melodies.**
3. **Now use your diagrams to match the sounds of each instrument as best you can using a synthesiser (software or hardware). Can you work out the 'Demogorgon' theme the same way?**

Approaching electronic tracks this way, learning their musical components and then imitating their electronic ones, is almost like listening with all your senses!

Assessment opportunities

In this activity you have practised skills that are assessed using Criterion A: Knowing and understanding and Criterion B: Developing skills.
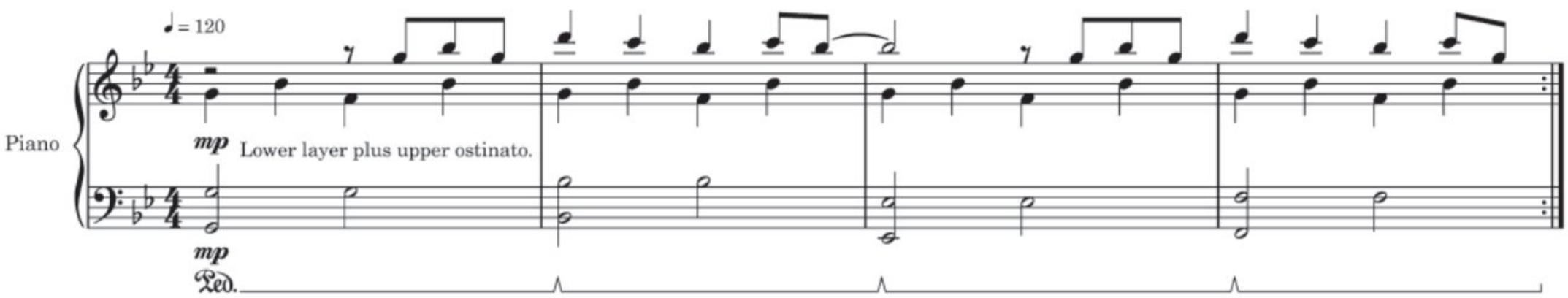


Figure 8.28 'Kids' in three performable layers transcribed for performance



Figure 8.29 'Demogorgon' theme in Synth One with the detune knob dialled up full

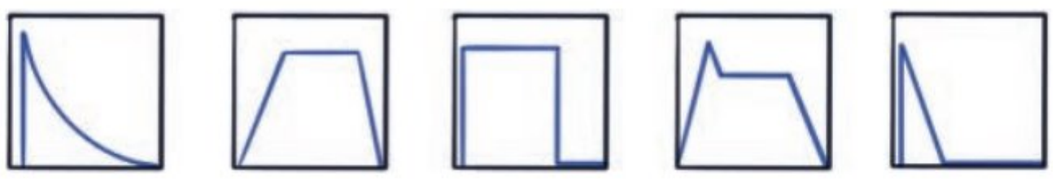


Figure 8.30 ADSR diagram boxes to test out your listening skills. Can you name the instrument?

ACTIVITY: Defender of the universe

ATL

- Transfer skills: Combining knowledge, understanding and skills to create products or solutions

Voltron was a cartoon adaptation of several Japanese anime television series from Toei Animation in the early 1980s. Then in 2016, *Voltron: Legendary Defender* was produced by DreamWorks Animation and World Events Productions. The opening titles set the tone for an epic, synth-based score composed by Alex Geringas.

1 a Using the methods of deconstruction that we looked at previously, get together in small groups and discuss the musical features you see in this excerpt (cut-out section).

b Identify elements that repeat – but discuss what is different (for example, the rising motif is repeated after the descending ostinato, but this time a perfect 5th higher).

c Listen to the track again and brainstorm how to recreate the opening synth sound(s) for the *Voltron motif* (drawing ADSR diagrams will be useful).

More music from Voltron can be heard at series composer Brian Parkhurst's Soundcloud: **https://soundcloud.com/brianparkhurst/sets**; in particular, the track 'Heart of the Lion – Razor Thin'. At 1'09 a melodic motif and harmonic pattern is heard that we will examine and program ourselves.

2 a Perform the theme and share the parts in groups. You can use acoustic or electronic instruments with sounds you make that fit the aesthetic (or overall tone-colour) of the piece.

b Now notate this pattern into a program like MuseScore or with pencil and paper. What other techniques can we use to re-orchestrate this section of music: i layers of percussion? ii arpeggios like Vangelis? iii a high pedal note? iv a second motif?

Assessment opportunities

In this activity you have practised skills that are assessed using Criterion C: Thinking creatively and Criterion D: Responding.
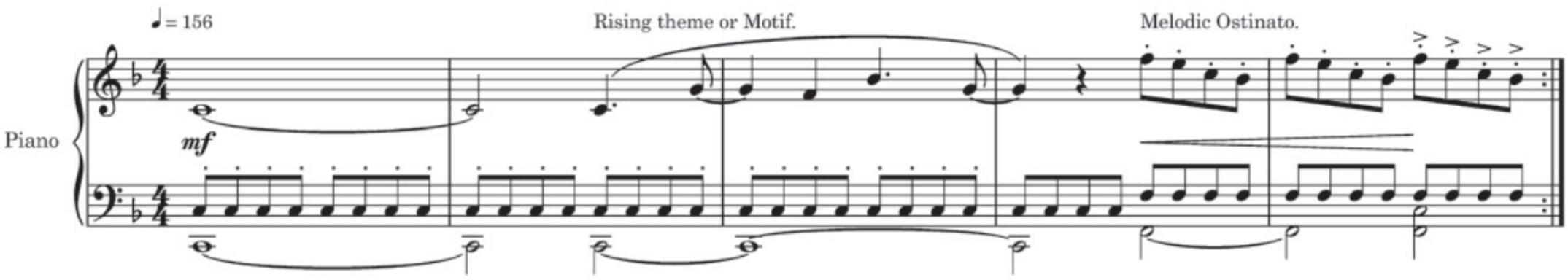


Figure 8.31 *Voltron* theme by Alex Geringas with motif transcribed

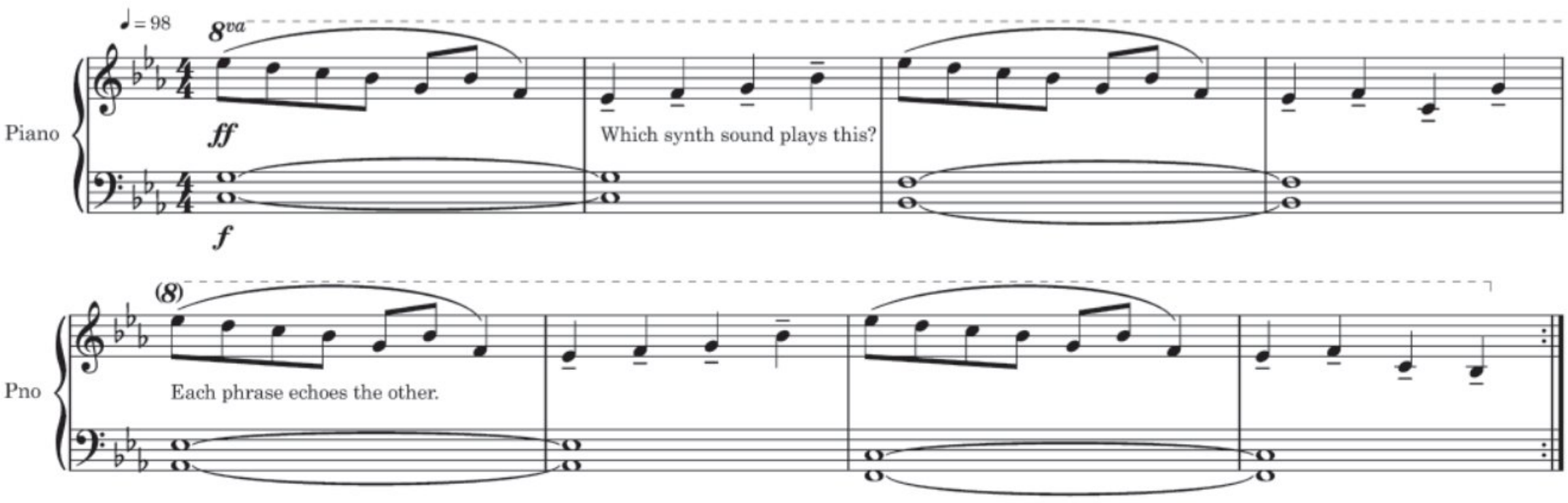


Figure 8.32 'Razor Thin' by Brian Parkhurst, transcription from 1'09

Would past composers have used electronic media and its tools?



■ **Figure 8.33** Moog subsequent synthesiser

GENERATE–SORT–CONNECT–ELABORATE

We hear of the greatness of the music of J.S. Bach (1685–1750) with his *Brandenburg Concertos* or Mussorgsky's Pictures at an Exhibition. However, wouldn't it be amazing to see what they could **create** with the technology we have today? Imagine Bach's DJ set, mixed with GarageBand **loops**. How would he have approached performance in today's world?

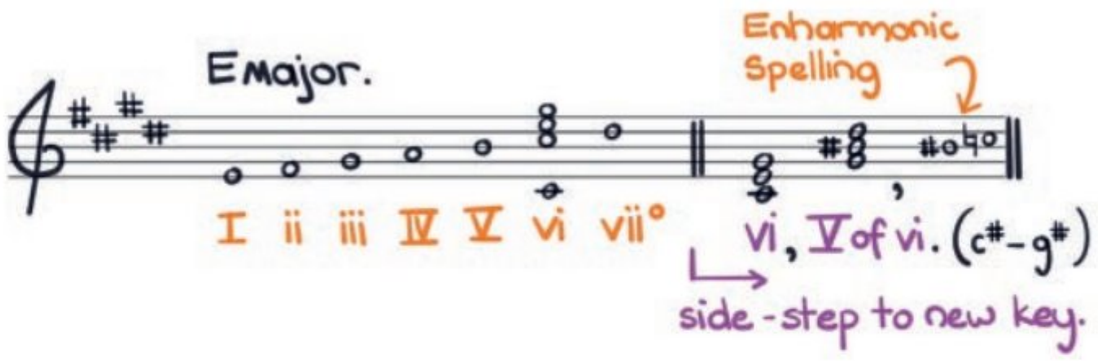
- **Generate a mind-map where you list ideas of how Bach may have utilised / worked with electronic music.**
- **Sort your ideas according to how realistic or 'outside the box' they are. Place realistic ideas near the centre and more abstract ideas toward the outside of your page.**
- **Connect your ideas by drawing connecting lines between points that have something in common. Write a short sentence to explain how the ideas are connected.**
- **Elaborate or add to your initial ideas, by sharing your mind-map with a friend.**

An album was released in 1971 that saw progressive rock performers Emerson, Lake and Palmer transform the score of Mussorgsky's "Pictures at an Exhibition" using electronic sounds, live instruments and synth solos. Listen to it on the provided playlist. Does it fit any of the ideas you mapped above?

FINDING A STRUCTURE FOR ELECTRONIC MUSIC

Learning to spot ostinatos, chords or even rhythmic patterns will be excellent training for your own creations. However, the questions will inevitably arise: How do I structure this? How do I know where to put these ideas? And in which order will they go? This is where drawing structural maps of any genre will help you deconstruct the many forms artists arrange their music into.

In 2018, singer Ellie Goulding and record producer Diplo released their song 'Close to Me' (featuring vocalist Swae Lee). Not only is this song unique in its melody and chord progression, but it follows a format that is a good starting spot for structuring electronic or dance music. The chord progression is a standard 4-measure repetition with a slight twist that is refreshing in popular music – the use of a chord outside of the major chord formula!



■ **Figure 8.34** Chord diagram with major chord formula change for a secondary-dominant; this is where the composer chooses a V or dominant chord of the one they just played, instead of the key they are in at the time

ACTIVITY: Structure in electronic music?

ATL

- Information literacy skills: Using critical literacy skills to analyse and interpret media communications

1. **Listen to the song 'Close to Me' on the playlist.**
2. **Create a structural outline of the song, adding descriptions of any changes that you can describe in your portfolio.**
3. **Remember, the chord progression is a unifying element; this means other elements build onto it to add interest to the track.**
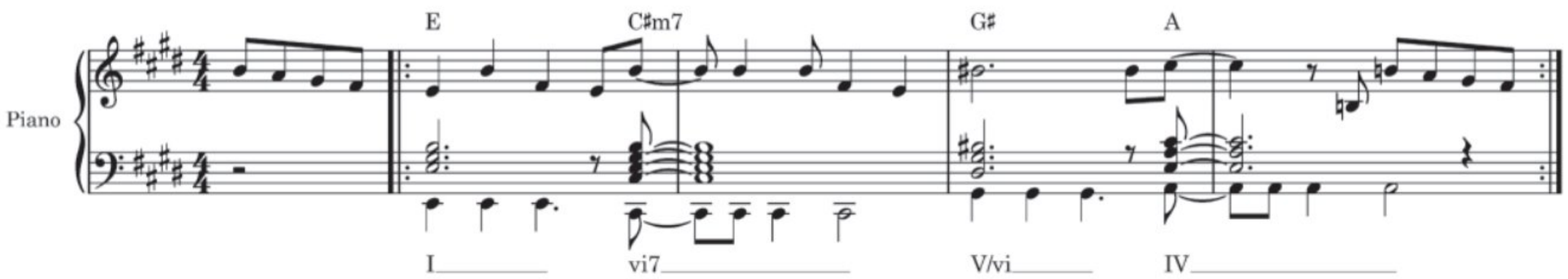


Figure 8.35 Transcription of the chorus from 'Close to Me'

Our brains work by **identifying** phrases or sections in music that sound complete on their own. Most electronic works structure their phrases in 4, 8 or 32-measure forms. To *deconstruct* a track, we aim to look at its musical components first, and then map or sketch out its structure to describe its electronic components. This method gives you a holistic view into how it was **created**.

Assessment opportunities

In this activity you have practised skills that are assessed using Criterion A: Knowing and understanding and Criterion D: Responding.

ACTIVITY: Vangelis' 'Antartica'

ATL

- Creative thinking skills: Applying existing knowledge to generate new ideas, products or processes

'Antartica' is a work that clearly shows a form of **through-composition**. Vangelis released it in 1983 to the Japanese film *Antarctica*, directed by Koreyoshi Kurahara. The imagery of cold and ice can be heard in the sustained chords, high-pitched melody and arpeggio **sequence** that repeats in the middle.

1. **Sketch out the ADSR diagrams of the three layers pictured below.**
2. **Using acoustic instruments or devices, perform the three sections and loop them in a 16-measure cycle.**
3. **Now using the spaces left by each part, add your own layers of sounds that fill in the gaps as complementary patterns.**

Assessment opportunities

In this activity you have practised skills that are assessed using Criterion A: Knowing and understanding and Criterion C: Thinking creatively.
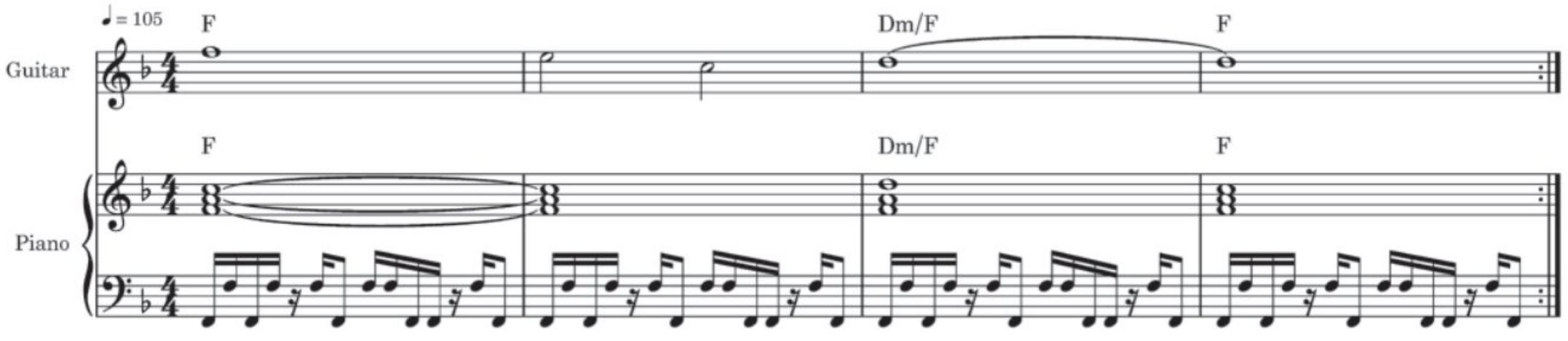


Figure 8.36 'Antarctica' transcription

How does rhythm define a genre?

BEATS AS PATTERNS

Rhythm is a concept of music that some connect to the speed or tempo of a track (such as beats per minute / bpm). Others say it connects better to repetition and ostinatos (such as four-to-the-floor kick-drum patterns), then syncopation. Generally, most will agree rhythm refers to a **time signature** and to the length of notes used. However, *rhythm* connects all of the terms and descriptions above, plus anything that affects the grouping and division of the beat in music.

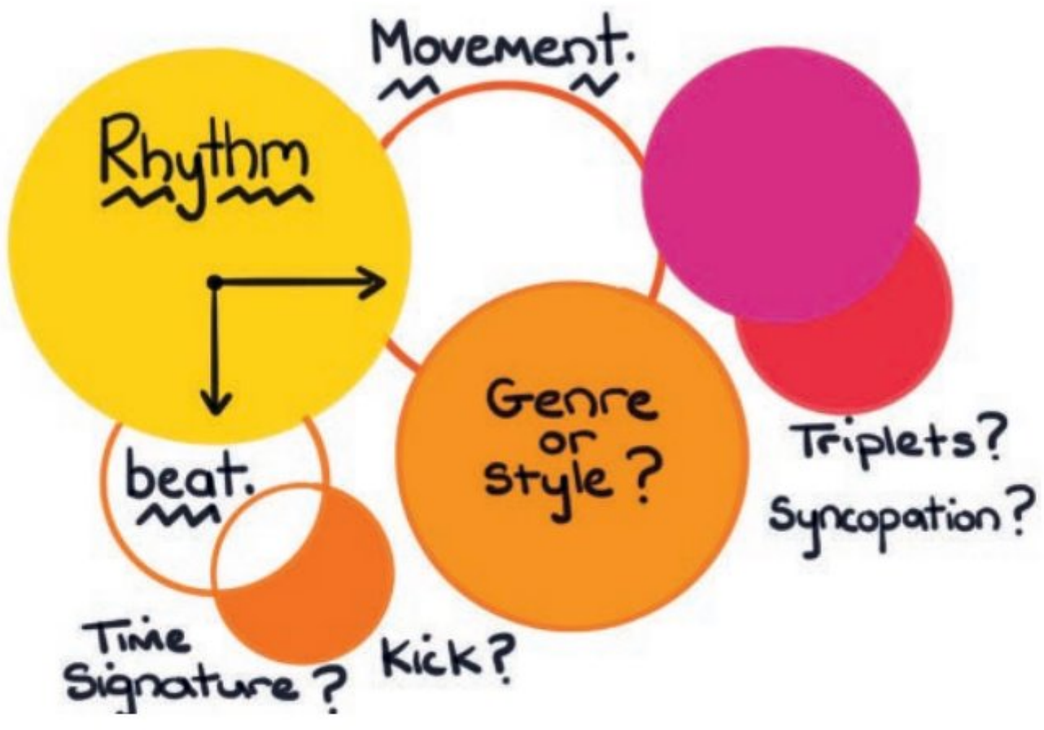


■ **Figure 8.37**

THINK–PAIR–SHARE

This thinking activity will have you engaging in many different genres of music.

1. **When you think of the word *rhythm* in relation to electronic music, which parts of the music come to mind? Open up your portfolio and brainstorm as many ideas as possible to fill the page.**
2. **Once you have a large collection of ideas centred around the word *rhythm*, circle or add new ideas that talk about *beat* and *movement*. For example, 'using a kick drum on every beat such as 1 2 3 4'.**
3. **Lastly, think of musical genres that you are familiar with. This could be anything from dubstep to trance, ambient or pop. How do these genres use rhythm? Write short descriptions that may include 'house music uses syncopation with the high hats' or 'pop music uses the snare drum on beats 2 and 4'.**



■ **Figure 8.38** Brainstorming example on *rhythm*

The 1972 album *The Dark Side of the Moon* by Pink Floyd featured a track called 'On The Run' that used a Moog synthesiser to generate a rhythmic sequence. The rhythmic movement generated by the synth allowed the song to build on top of its pattern.



■ **Figure 8.39** Screenshot of Arturia's Modular V preset for 'On the Run'

Go back over your brainstorming and ask yourself: Did you talk about other instruments and patterns that can provide rhythm?

Pair with a friend to discuss this question and then **share** your conclusions with the class.

ACTIVITY: Programming beats

ATL

- Reflection skills: Developing new skills, techniques and strategies for effective learning

In various genres of electronic music, how the drums are programmed helps distinguish that style from others. With so many different genres, from house to future bass and pop, we will need to examine what some patterns look like, before connecting them with artists and genres.

House is one of the common beat patterns that places the kick drum on the four-to-the-floor pattern, seen in this image from GarageBand's Beat Sequencer. Each of the four purple-coloured blocks begins a single measure in 4/4.



Figure 8.40 House Beat in GarageBand (BPM 120–130)

Then there is the *drum and bass* style that also fits into this grid format of semi-quavers (16th notes).



Figure 8.41 Drum and bass in GarageBand (BPM 168–180)

SoundTrap also lets you program beats, but this time we can **use** the pattern sequencer, and piano roll to **create** a Trap Beat.

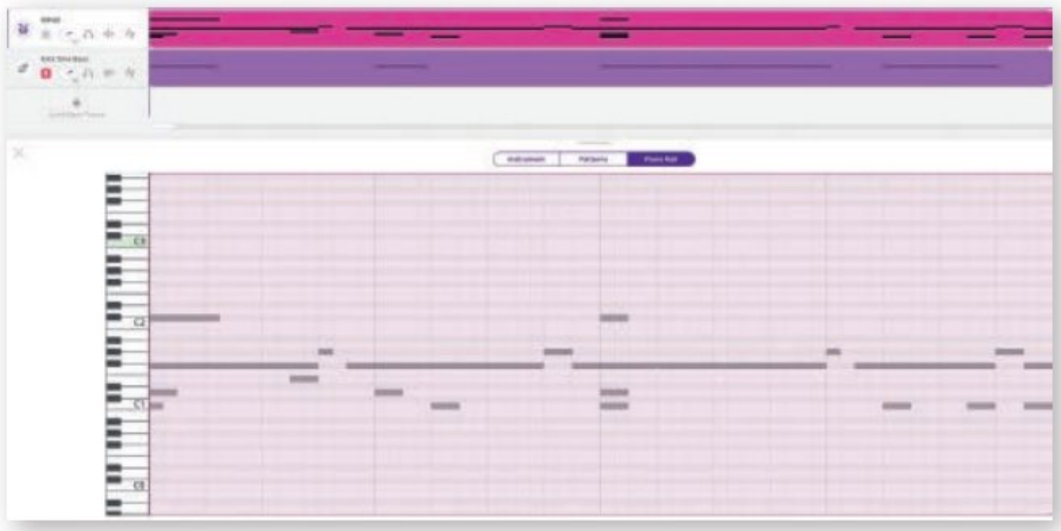


Figure 8.42 Trap in SoundTrap (BPM 100–176; here, 140)

The biggest hurdle to getting started is learning which style uses which pattern. By deconstructing the rhythmic components of a track, you can quickly **identify** the genre and work with its building blocks to make your own music.

1. **Research a beat pattern online for trap, future bass, hip-hop, and more with EDM Productions: www.edmprod.com/drums-guide**
2. **Using one of your devices, or by drawing the grids on paper, create the rhythmic style that you chose.**

This is the beginning to understanding rhythmic characteristics in electronic genres.

Assessment opportunities

In this activity you have practised skills that are assessed using Criterion A: Knowing and understanding and Criterion C: Thinking creatively.

ACTIVITY: Programming beats

ATL

- Information literacy skills: Evaluating and selecting information sources and digital tools based on their appropriateness to specific tasks

In this activity we are going to program drums like Afrika Bambaataa's 'Planet Rock', Genesis' 'Fading Lights' or Jamie xx's 'Gosh'; all with an online 808: https://io808.com. With this online drum machine, you can save your beat, record it or share it with others.

Why the 808 drum machine? This versatile box broke down barriers between musical genres and gave artists the ability to innovate entire songs on their own.

'Planet Rock' (1982) is one such innovative song, by group Afrika Bambaataa & the Soulsonic Force. This one song (which also included a sample of Stravinsky's 'Firebird') helped pioneer the sound of modern hip-hop.

1. **Visit https://io808.com or https://html5drummachine.com/virtual-drum-machine in your device's browser to begin programming a beat.**
2. **Save your beats, or draw them into your portfolio.**
3. **Visit http://808.pixll.de and experiment with recreating 'Planet Rock' or other tracks for yourself.**

Assessment opportunities

In this activity you have practised skills that are assessed using Criterion B: Developing skills and Criterion D: Responding.

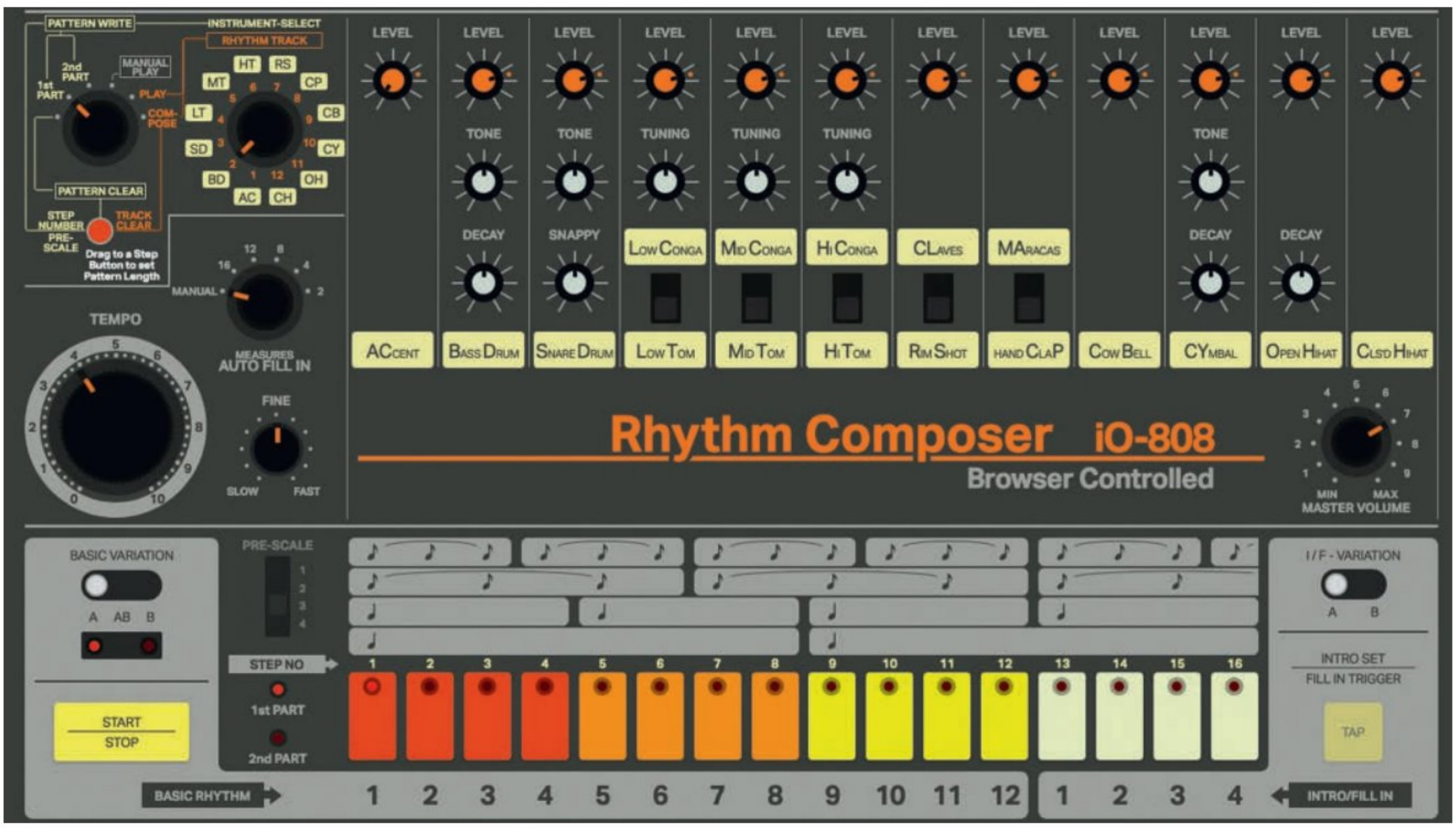


Figure 8.43 Online 808 drum machine

How has electronic music brought innovation to creating and performing?

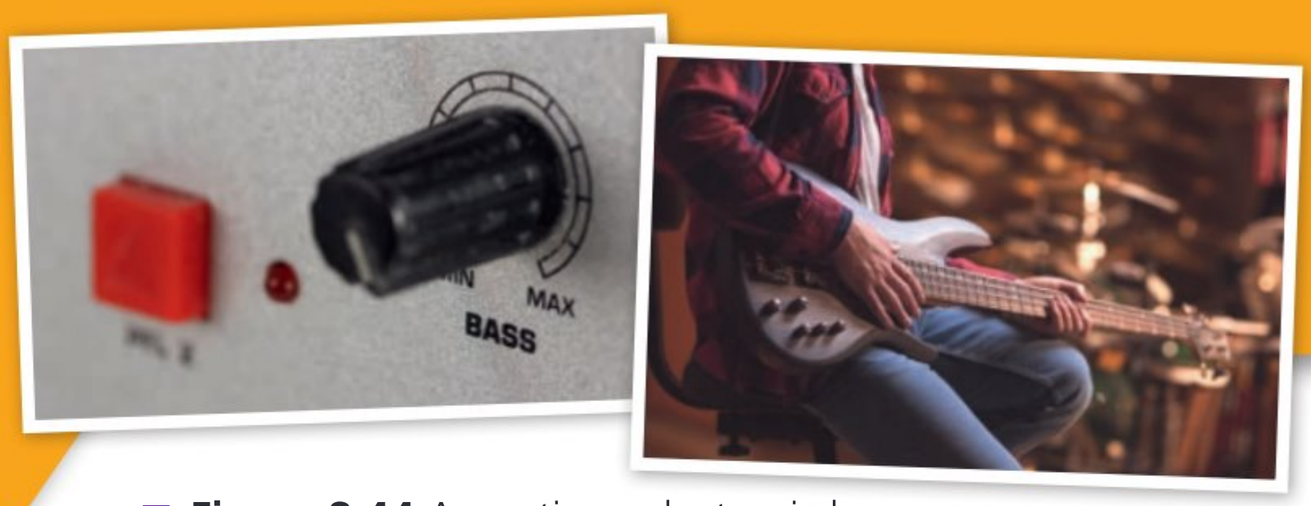


Figure 8.44 Acoustic or electronic bass

THE BASS LINE AS THE GLUE

ACTIVITY: The music of Stromae

ATL

- Creative thinking skills: Focusing on the process of creating by imitating the work of others

Paul Van Haver (b. 1985), professionally known as Stromae, is a singer-songwriter who skyrocketed to fame with his hit *Alors on danse* in 2009. In 2013, his second album *Racine carrée* was even more successful, with hits like *Papaoutai* and *Formidable* (2014). One of the reasons for his success is that Stromae's musical components – his bass lines, melodies and use of harmony – are well crafted. If he does repeat something, Stromae will vary it or add another layer, building on his already catchy hook or riff. When he writes his music, it is clear he structures it around unique rhythms – and bass lines.

In this activity, we will sing, perform and notate our own parts to three of Stromae's hit songs: *Alors on danse*, *Papaoutai* and *Formidable* (listen to them first on the playlist).

1 ***Alors on danse***

The unique focus of this song will be the opening syncopated bass line. Stromae sets his bass against the 4-beat kick drum, and this instantly pushes the bass line forwards because of its syncopation. Your task will be to play the bass line while a friend performs the drum part as body percussion. Can you play the two parts as a loop?

As an extension task, go through the rest of the song to **create** ADSR maps of the sounds Stromae uses. Why do you think he chose those particular electronic sounds?
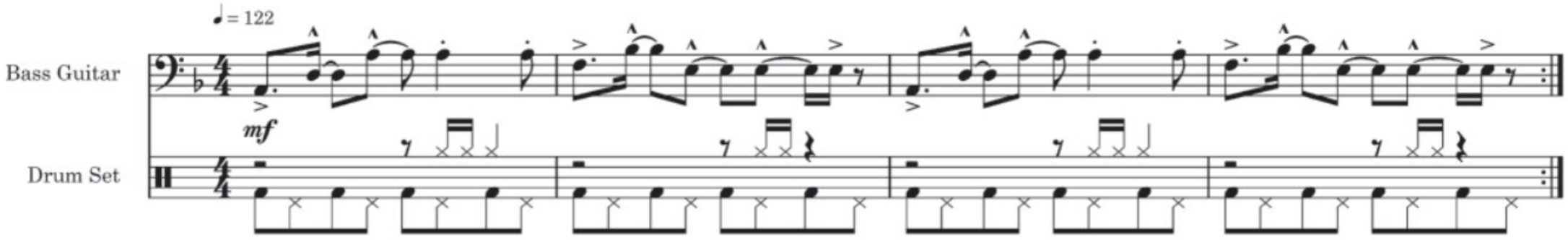
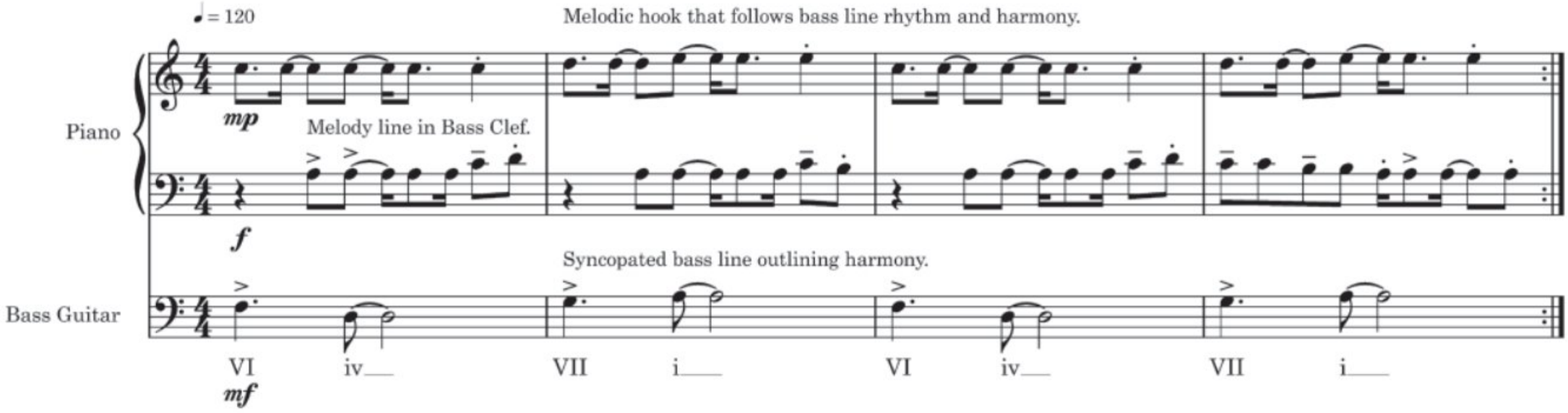


Figure 8.45 *Alors on danse* drum and bass line transcribed

2 ***Papaoutai***

This track is an incredible combination of rhythmic layers all pieced together like a puzzle. The song revolves around a 4-chord progression in Bb minor of G♭ (VI) / E♭ minor (iv) / A♭ (VII) / B♭ Minor (i). Yet, to keep the dance music evolving, the melody waits until the bass has played, entering in the space provided. Once this has been repeated, a second melodic line or hook enters as a synth sound that cuts above the bass with its shorter rhythms.

Play the bass line as written on a device or instrument. What does the bass guitar always play on beat 1?



■ **Figure 8.46** Transcription showing minor chord formula and bass lines connecting rhythmically to each layer

3 ***Formidable***

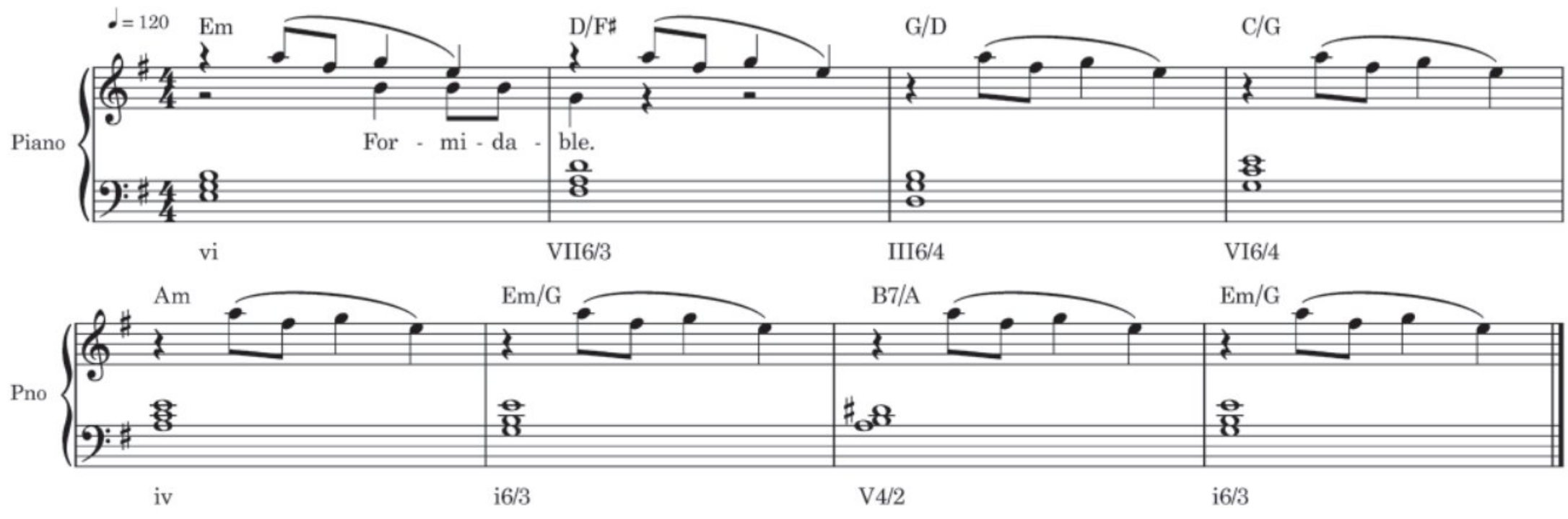
This track takes popular music to the next level. (see Figure 8.47). Once again, Stromae's rhythmic layers transport the audience inside the music, starting with an ostinato that begins on beat 2. The audience is then surprised by the chords entering on beat 1, and even more so that the melody begins on beat 3! This is planned, and Stromae develops a structure around the bass / harmony to glue it all together.

Using a notation program like MuseScore or Symphony Pro on the iPad, notate these chords so you can hear them play back. Then, using the chord tones (notes of the chords), improvise your own ostinato on top. Use Stromae's method of finding a single group of notes that can repeat over the progression.

As a final step, add in your own bass line using the bottom notes of each of the chords given; but you know that it needs to be rhythmic, so be creative!

◆ Assessment opportunities

In this activity you have practised skills that are assessed using Criterion A: Knowing and understanding and Criterion C: Thinking creatively.



■ **Figure 8.47** *Formidable* is wonderful in its construction!

I USED TO THINK… BUT NOW I THINK…

Bass lines hold music together *like glue*. Whether it is a dance track or Baroque **suite**, bass lines **lock in** with the beat, and push the music forward rhythmically and harmonically. But what does a bass line look like in the 21st Century?



■ **Figure 8.48** Synths provide the main foundation of bass parts in today's contemporary music.

Put yourself into small groups, each with your portfolio and a device to research *EDM bass lines*. Web resources like **https://promusicproducers.com/10-common-bassline-patterns-in-edm** are a great start.

First, listen to one of the ten different types of bass lines **presented** and write short descriptions of each. Do they use synths or real instruments? Are they on the beat or syncopated? Do they use intervals or just repeat the same note? Do they jump and skip notes or move by step?

Secondly, next to each of your descriptions write a short note (or draw a picture) of how the bass interacts with the beat. For example, do they play together? Does the bass syncopate the beat, or does the percussion?

When you are finished, reflect on the following prompts and talk through your answers with each other:

1 **I used to think bass lines…**
2 **But now I think bass lines…**

You could start researching other patterns such as future bass (**https://promusicproducers.com/14-future-house-bassline-patterns**) and start a collection to take your own music to the next level!

! Take action

- ! Find out how music has evolved and how artists have innovated with both musical structures and electronic sounds.
- ! Explore different genres, tools and techniques of electronic music, analysing their components so we can experiment with them ourselves.
- ! Perform, record and create your own works that demonstrate technical and artistic innovation.
- ! DJ and host the music for your school's community sport, team tournament or international day events.

How do complementary patterns work with chords?



■ **Figure 8.49**

WHAT MAKES YOU SAY THAT?

Tobe Nwigwe is a rapper and soulful artist who performed a live set in 2019 as a part of NPR's Tiny Desk Concert Series. The artist performed a collection of tracks, starting with *Houston Tribute*, and it's amazing to see the backing group play each part up close: **www.npr.org/2019/08/19/751247794/tobe-nwigwe-tiny-desk-concert**

Tobe Nwigwe's style is a clear take on soul, with the combination of clean guitar phrases, harmonised vocal lines and then echoes with the voice and keyboard. When the drums and bass enter, you can see – and feel – the groove!

As a class, **discuss** what you think is the unifying feature of this performance. Is there a single layer, instrument, phrase or chord progression that, if you took it out, everything would fall apart? You are looking for a musical element that 'unifies' the piece. Make sure you refer to the acronym **IDEA** as you give evidence for your reasons.

THE CONNECTION OF STRUCTURE TO HARMONY

Musical exploration: Form versus structure in music

Music throughout the ages has been constructed and built according to different patterns, phrases and even dances. Musicians from the Renaissance, Baroque and Classical eras used *dances* with different time signatures as musical forms throughout the 16th–18th Centuries. That EDM (electronic dance music) uses a series of 4 to 8-measure phrases with repeated sections to structure its tracks is nothing new. The key vocabulary to discussing this is that **a** *form* is the big picture of the work and **b** there are internal *structures* that hold the work together, much like the internal structures of a building.

Whenever you listen to a new track, always ask yourself: What form is this piece in? Then investigate as to what the *structure* is by asking: What is holding this piece together?

Form Title	Outline of inner structures
Binary	Has two sections that we label as A and B; they can be different in melody, rhythm, harmony and **texture**.
Ternary	Has three sections, with the returning A section sometimes being a little different so it is labelled A-B-A1.
Rondo	The first section keeps repeating and adds a new one after each repetition, A-B-A-C-A.
Strophic	The same music each time but different words, just like a national anthem or **lieder**.
Song form	This can include an introduction, verse, pre-chorus, chorus, bridge, outro, etc. EDM artists now add build-ups, drops, instrumental sections, and are mostly in time signatures of 4/4.
Baroque suite	These included individual movements with different characters, such as the Allemande (German) in 4/4, and Courante (French or Italian) in 3/4 or 3/8.

ACTIVITY: Flume and Kygo's chords

ATL

- Creative thinking skills: Using brainstorming and visual diagrams to generate new ideas and inquiries

Kygo and Flume are both DJs, song-writers and producers. Their music is characterised by infectious melodic hooks, rhythms and chord progressions, as well as a high production quality. This activity will focus on the internal harmonic structures of two tracks, giving you a foundation to write and produce your own.

1. **'It Ain't Me': Kygo and Selena Gomez**
 This song uses a standard progression in A minor, with the minor chord formula we now know (see Figure 8.50). Repetition of this progression provides a tonal foundation to our ears. However, at the end of the chorus Kygo uses three consecutive chords from the harmonic-minor chord formula!
2. **'You & Me': Flume remix**
 Straight away it is clear that the progression offers a harmonic and rhythmic foundation, with the stabbing quaver (8th-note beats) and extended 7th chords. The chords follow an 8-measure progression, using the minor chord formula of B♭ minor, reinforced by even longer, lower string parts.
 Then in the chorus, Flume repeats these chords with a syncopated rhythmic variation that locks in with the percussion (much like artist Stromae does in the previous activities).

Now it's your turn!

Create an 8-measure template in MuseScore, GarageBand or SoundTrap. Then, **using** the chords shown, play and arrange them into patterns that could be used at the chorus for a Kygo or Flume track. If you can, add synthesiser layers with effects on the ADSR envelopes. Document any creations you have in your portfolio, including how you craft the synthesiser sounds.

Assessment opportunities

In this activity you have practised skills that are assessed using Criterion B: Developing skills and Criterion D: Responding.

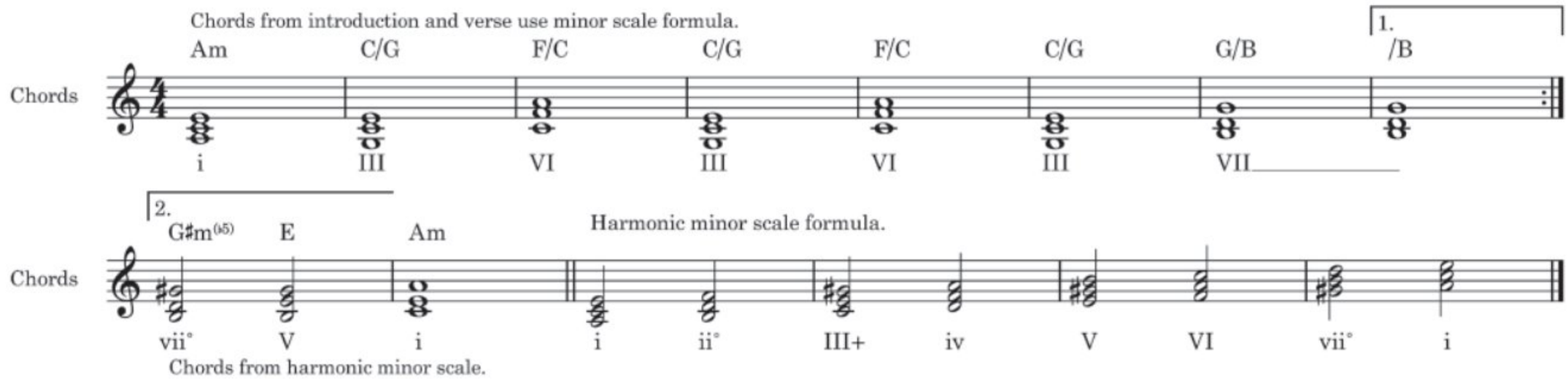


Figure 8.50 Standard progression using the natural minor formula; the second line uses the harmonic minor scale

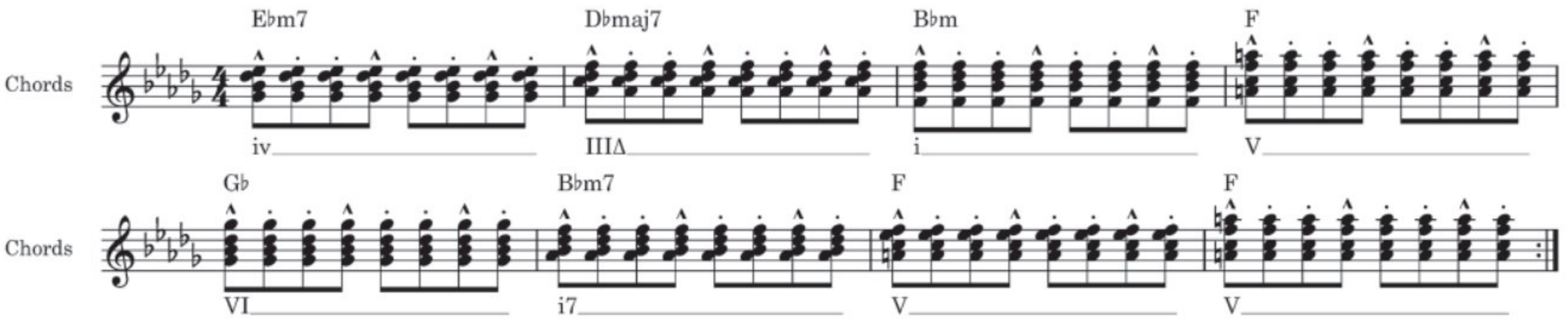


Figure 8.51 B♭ minor chord progression in 8ths, with accents and showing 7th extensions

Is playing programmed electronic instruments cheating?



■ **Figure 8.52** Dancing or dubstep orchestral instruments?

WHAT ABOUT DUBSTEP?

What about dubstep? After creating a YouTube channel in 2007, violinist, song-writer and choreographer Lindsey Stirling (b. 1986) released a track that made headlines for blending violin and the electronic genre of dubstep. Her song 'Crystallize' was the eighth most-watched video on YouTube in 2012, with currently over 218 million views. Watch the video at **https://youtu.be/aHjpOzsQ9YI** or listen to it on the playlist.

Dubstep is a fascinating genre of electronic music because it is always changing and evolving. What used to be a defining characteristic was the typical rhythm shown below.

However, with artists like Skrillex it has come to include chopped samples and glitching effects more along the lines of the BBC Radiophonics Workshop *musique concrète*.

CIRCLE OF VIEWPOINTS

In your portfolio, brainstorm a list of different perspectives on whether classical art and electronic music should be combined. You can **use** these example starting points to structure your responses:
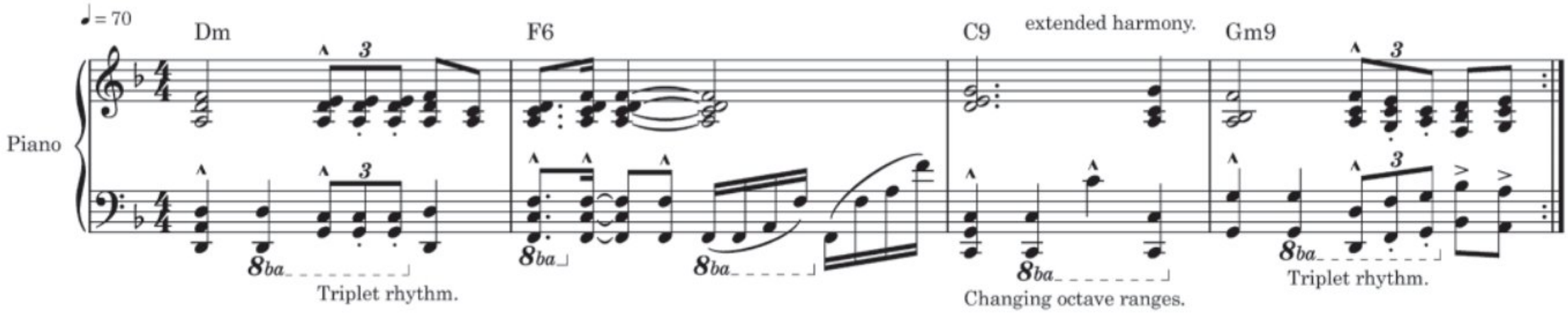
1. **I am thinking of whether classical art and electronic music should be combined from the point of view of… (artist, audience, presenter, interviewer, and so on)**
2. **I think… (describe the topic from your viewpoint)**
3. **A question I have from this viewpoint is… (feel free to discuss and question those around you on their points and reasons)**

Stirling commented on her blending of electronic music, the dubstep genre and even traditional hymns with her 2018 track 'I Wonder As I Wander': **https://youtu.be/4rR8jc6EPQM**

> *"… this song has never been done in an electronic, epic style. It's always done very sweetly. And it's still haunting, but it was really fun to… take a few of these songs and… turn them on their heads and do them in a way that's never been done before."*

Wrap up

What new ideas do you have about combining genres that you didn't have before? Did any interesting points come up during shared discussions? Keep these in mind as we investigate some further collaborations between electronic and art music.



■ **Figure 8.53** Dubstep rhythm in 'Crystallize' mm21–24

ACTIVITY: 'Blow It Up, Start Again!'

ATL

- Reflection skills: Developing new skills, techniques and strategies for effective learning
- Transfer skills: Inquiring in different contexts to gain a different perspective

First performed in 2012 at the Orchestra Hall in Chicago, Illinois, 'Blow It Up, Start Again' is an incredible work of colour, innovation and composing electronica within a traditional ensemble. For example, composer Jonathan Newman wrote the work with exciting playing techniques that make it sound as if the trombones are playing dubstep!

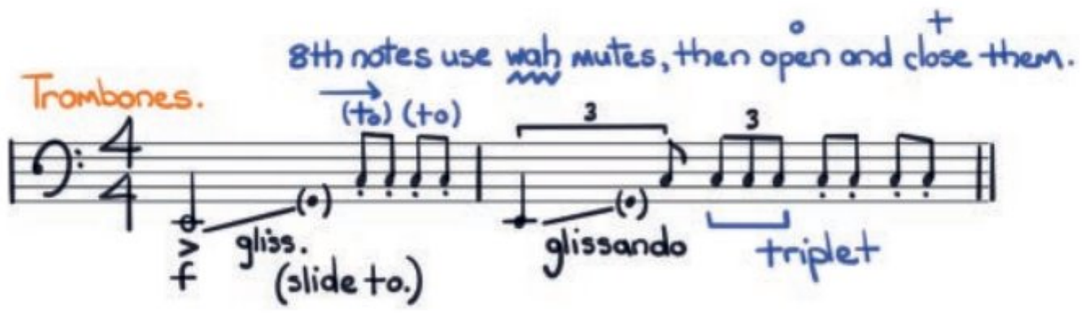


Figure 8.54 Dubstep trombones mm10–11

Further on, the high woodwinds provide ascending melodic motifs against a syncopated bass drum, exactly as you would find in electronic dance music!

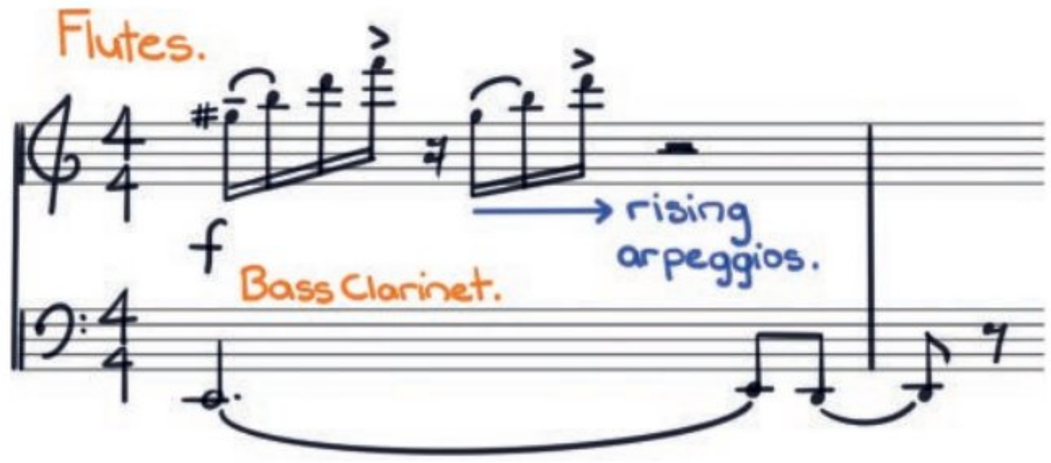


Figure 8.55 Dubstep winds and bass mm38–39

You can view a copy of the score and listen to the piece here: **https://jonathannewman.com/music/blow-it-up-start-again-orchestra**

Your mission is to apply the following notated sections to make an instrument of your own choosing sound like it is playing dubstep.

1. **Using Lindsey Stirling's chord progression from 'Crystallize' Dm / F6 / C9 / Gm9, enter the 4-measure progression into MuseScore, GarageBand and / or SoundTrap (feel free to simplify it).**
2. **Pick a solo instrument that you can play, or are learning. After adding that instrument or creating a new track, experiment with ways of notating / playing the typical dubstep triplets featured in both Stirling and Newman's works.**
3. **Record and listen back to your creation. If it has been notated, make sure you play it or ask someone to play it for you.**

Finding interesting rhythmic options in genres like dubstep are the very building blocks you need to make your own music.

Assessment opportunities

In this activity you have practised skills that are assessed using Criterion B: Developing skills and Criterion C: Thinking creatively.

ACTIVITY: ‘Bangarang’ or Beatles

ATL

- Creative thinking skills: Using brainstorming and visual diagrams to generate new ideas and inquiries

Dubstep as a genre has moved forward, with production techniques including chopping vocals and glitching rhythms (where the producer takes one rhythmic line and cuts it up to sound like it is rapidly moving around a large space). The cliché triplet rhythm is sometimes replaced by these rhythmic variations (see Figure 8.56).

The Beatles experimented with this idea in a more *musique concrète* way, by layering different sounds on top of each for their track ‘Revolution 9’. Listen to it on the playlist and discuss as a class what types of sounds you can **identify**, describe or make yourself.

For this activity, record a series of sounds that you can find around you right now. **Using** a device, phone or USB mic, record everything, from doors creaking to pencils breaking and bird noises. Then, following the Skrillex or Beatles example above, layer these sounds into a 4–8-measure loop inside of GarageBand or SoundTrap. You can also add a drum pattern you have researched. What type of glitching effects can you **create**?

Document your creation in your portfolio with images, drawings and screenshots.

Assessment opportunities

In this activity you have practised skills that are assessed using Criterion C: Thinking creatively and Criterion D: Responding.

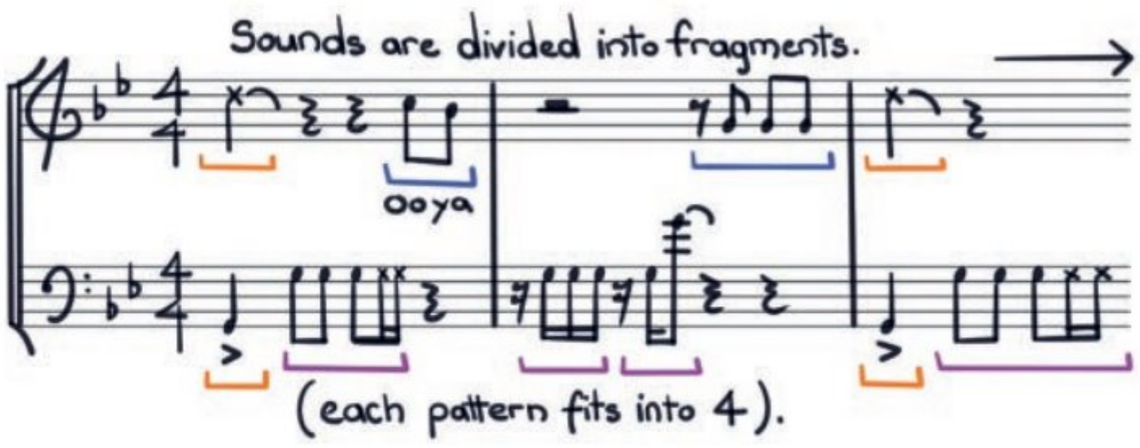


Figure 8.56 ‘Bangarang’ by Skrillex glitch-rhythmic parts showing broken patterns like puzzle pieces

EXTENSION

Ensemble performance: Lola Scott

Technology has generated many innovative approaches for live performance. Indie-pop artist Lola Scott released her latest single, ‘Cyclone Weather’ in 2020. Lola Scott produces her music in a studio with collaborators (other producers), recording each instrument layer by layer. But then something different happens when the music is live.

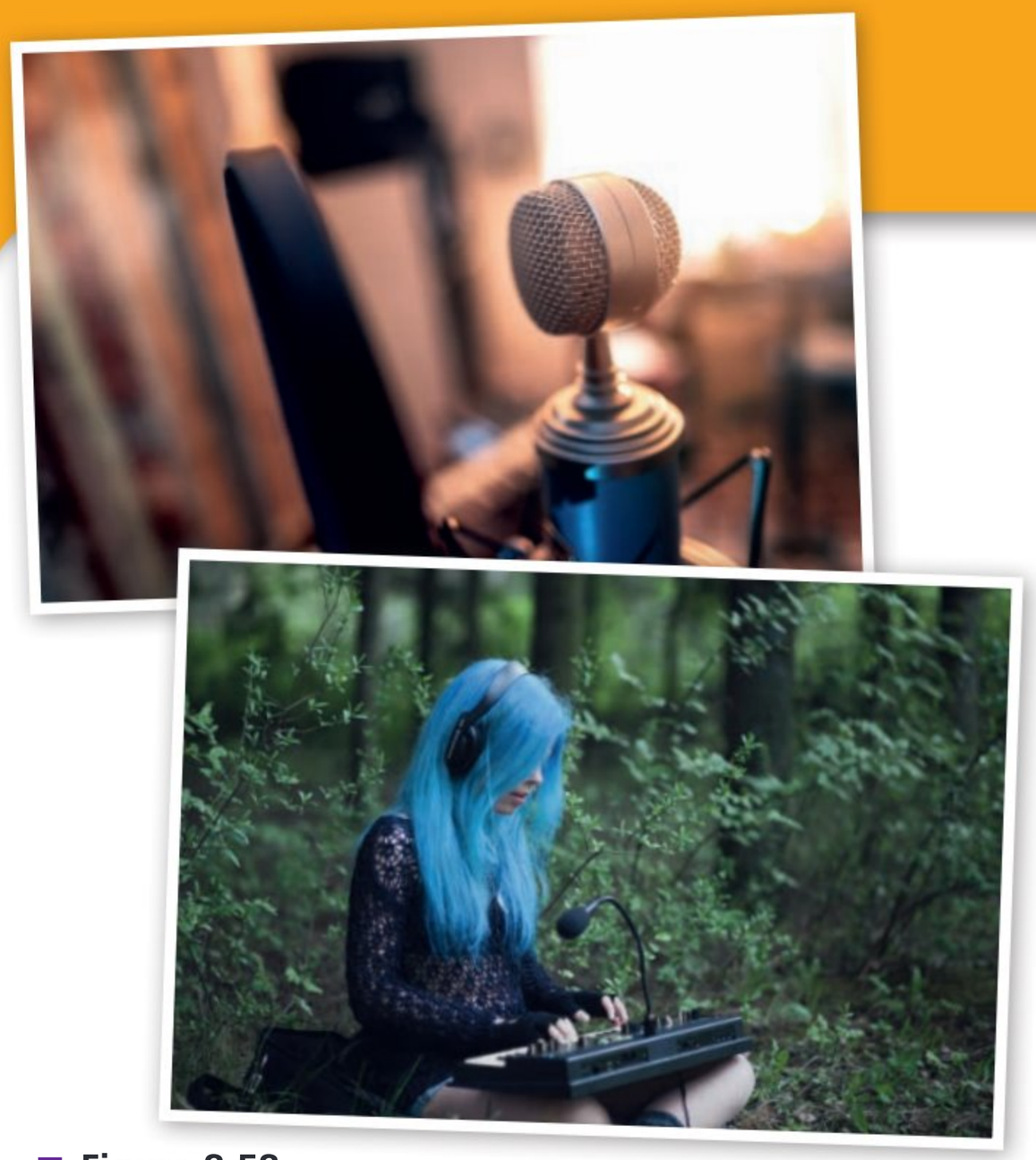
Lola Scott explains that she has all the recorded parts lined up in a software program called Ableton. Then, using a keyboard with drum pads, she hits the pads to trigger the next song in a set. The software will then play any synths, samples and percussion that are not covered by the live band. Lola Scott can move to any song within a live set, and sound like the released single.



Figure 8.57 Keyboard used to map live performances using MIDI (computer commands inside of a DAW) provided by Lola Scott

Experiment with producing a song with all the techniques **explored** so far. Then, perform it live with a single instrument, simply by muting and unmuting certain tracks in GarageBand or SoundTrap. Are you ready for the challenge?

What is a vocoder?



■ **Figure 8.58**

THE POWER OF MIXING THE VOICE WITH ELECTRONICS

The vocoder is an immensely versatile method of altering an acoustic signal, including the human voice. It can produce a very robotic effect or a computerised acapella sound.

Imogen Heap (b. 1977) performed, recorded and produced her own album *Speak for Yourself* in 2005 that included her hit song 'Hide and Seek'. This track feeds her vocals through a vocoder that transforms them into rich, moving harmonies. Heap's ideas and performances will often involve both acoustic and electronic material.

Next, is Olivia Broadfield's (b. 1981) hit song 'Say' that reached international status in 2011. In an interview with music software developer propellerheads.se, Olivia explains her creative process in using a vocoder within her track: **www.propellerheads.com/blog/olivia-broadfield**. Here, Olivia uses a Digitial Audio Workstation (DAW) called *Reason* to layer her voice in the chorus with the vocoder to beautiful effect. The vocal hook after 'please' and 'release' is also her voice run through a vocoder.



■ **Figure 8.59** MicroKorg with vocoder

COLOUR–SYMBOL–IMAGE

As a class, listen to both 'Hide and Seek' and 'Say' on the playlist or Soundcloud. Then in your portfolio reflect on the two tracks one at a time **using** the prompts below:

1. **Choose a colour that you feel best represents or captures the essence of the music.**
2. **Choose a symbol that you feel best represents or captures the essence of the music.**
3. **Choose an image that you feel best represents or captures the essence of the music.**

Were there any connections in either colour, symbol or image?

Olivia Broadfield was kind enough to reinterpret a Grade 9 Music student's composition in 2014, using the same techniques that she employed in her track 'Say'. You can listen to the final version here: **https://soundcloud.com/wrightstuffmusic/cobwebs-olivia-version?in=wrightstuffmusic/sets/song-writing-ideas-2014-1**. Do you think your colours, symbols and images work with these pieces?

Listening strategically: Get an IDEA

'Giant' by Calvin Harris and Rag'n'Bone Man is a great electronic dance track to analyse with a graphic structural diagram to identify its sections and internal musical structures, then compare it to The Kaleidoscope Orchestra's remix (orchestration by Steve Pycroft). Here you will be able to add more details of melodic and rhythmic phrases as played by orchestral instruments: **https://youtu.be/som4EqKr2cE**. Remember to use the acronym **IDEA** when writing in your portfolio.

Vespro della Beata Vergine (*Vespers for the Blessed Virgin*) *SV 206* is an extended musical composition by Claudio Monteverdi (1567–1643) for vocalists and chamber orchestra. These *Vespers of 1610* were written for the evening prayers in Catholic services, often sung in Latin.

What is unique about this work is Monteverdi's innovative use of sacred Gregorian **chant** as structurally unifying themes, combined with solo voices and continuo (a form of music called a *motet*). Listen to the opening 'Deus in adiutorium' on the playlist as a class.

We are going to compare Monteverdi with a modern work for voice and electronics entitled 'Vespers for a New Dark Age' (2014) by Missy Mazzoli. You can view a copy of the score here: **https://issuu.com/scoresondemand/docs/vespers_for_a_new_dark_age_49360**

> *"What is the role of religion or spirituality in our modern time? Bringing all the ideas together into live performance… with technology… how do we respond to that as humans?"*
>
> *Missy Mazzoli*

Mazzoli's 'Vespers' are an interpretation of the original prayer service. The composition includes voice, percussion, strings and electronics by producer Lorna Dune. Listen to 'Wayward Free Radical Dreams' on the playlist or Soundcloud: **https://soundcloud.com/newamrecords/missy-mazzoli-vespers-for-a-new-dark-age-wayward-free-radical-dreams**

ACTIVITY: Ambient vocals

ATL

- Transfer skills: Making connections between subject groups and disciplines

Using the opening chant from Monteverdi's 'Deus in adiutorium', you are to reinterpret it using music technology and voice just like Mazzoli. There are multiple options from recording and layering the tracks in GarageBand or SoundTrap, but research tutorials for vocoders and autotune-type effects online as well.

1. **Sing, play or organise a group to record the opening chant (Figure 8.60). It can be recorded in its entirety then looped, broken up into small phrases or performed as a canon.**
2. **Using the recording you have, add layers of percussion and synthesiser parts that you create. Use the Vangelis technique of repeating and slowly building layers on top of the chant.**
3. **Edit the settings of each synthesiser sound used, making diagram drawings of the ADSR envelopes to document your creations in your portfolio.**

Mazzoli's vocal work 'Overture' from *Song from the Uproar* (2012) is also a great piece for analysis.

Assessment opportunities

In this activity you have practised skills that are assessed using Criterion A: Knowing and understanding, Criterion B: Developing skills and Criterion C: Thinking creatively.
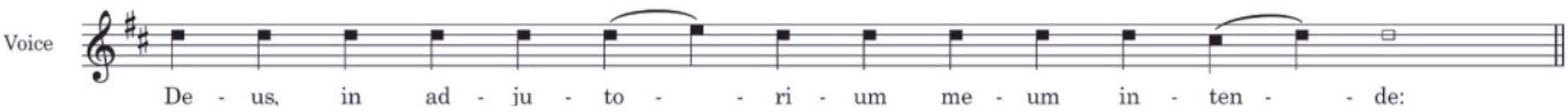


Figure 8.60 'Deus in adiutorium' introduction chant from *Vespers of 1610*

How can acoustic and electronic sounds be combined creatively?



■ **Figure 8.61 a** Collaborative performance using GarageBand's Alchemy Synth, **b** Getting started with sound design

Reflection

In this chapter we have **explored** the connection between electronic and acoustic sounds, **outlining** ways of *describing* their musical features or tone-colours (timbre). By finding a process of breaking down music to its structural and tonal components, we can now **identify**, *describe*, *analyse* and *explain* all genres and begin working with synthesisers. How an audience responds to a song, movement or album can also be **evaluated** by the techniques and tools employed by the artist, thereby **demonstrating** how innovative ideas in music can involve technical skill.

SOME SUMMATIVE OPTIONS TO TRY

Use these ideas to apply and extend your learning from this chapter. These problems can be assessed using any of the suggested strands above the summative activities. The presentation and portfolio requirements are given after the description.

THIS TASK CAN BE USED TO EVALUATE YOUR LEARNING IN CRITERION A AND CRITERION C (ALL STRANDS).

SUMMATIVE 1

Using the approaches **outlined** in this chapter, **develop** your own electronic work that evolves, section by section, adding and building layers. You can model it upon Vangelis' pieces, *Forbidden Planet*, Mazzoli's, Flume's or even Stromae's music. The goal is to **demonstrate** how acoustic and electronic instruments can build *complementary patterns* when following a planned structure.



■ **Figure 8.62** Screenshot of setting from SoundTrap synthesiser

Presentation and portfolio

You can **present** your work as a live performance or as a recording with a graphically drawn timeline that shows the ADSR envelopes of each sound used.

1. **Include a diagram of the chord progression and motifs used in your work. MuseScore or Symphony Pro are great tools to record your ideas on manuscript.**
2. **Document your experiments as short reflections during the creative process. This includes rehearsals, software tutorials online and testing synthesiser sounds.**
3. **Keep a timeline next to your project that shows when sounds will be entering and / or changing. This will then outline your final *form* with every internal structure as a graphic score.**

THIS TASK CAN BE USED TO EVALUATE YOUR LEARNING IN CRITERION B AND CRITERION D (ALL STRANDS).

SUMMATIVE 2

Build on the *musique concrète* ideas of the BBC Radiophonic Workshop by recording and editing your own soundscapes that relate to an environmental issue. The work conducted by audio experimenter Peter Cusak and his *Sounds from Dangerous Places* is a great model to imitate: **https://sounds-from-dangerous-places.org**, as is the *A Guide to the Birdsong of South America* on Bandcamp: **https://rhythmandroots.bandcamp.com/album/a-guide-to-the-birdsong-of-south-america**

Presentation and portfolio

You are to **present** a recording, made from sounds and software of your choice. Layer and repeat your sounds, applying edits, cuts, glitching effects, pedal notes, chords, beats etc. to unify them into patterns and an overarching form.

Extension

If you **use** Instagram there is an account experimenting with this exact form of creativity titled *AnimalsandSynthesisers*. Artist Tomer Baruch has many animal videos with explanations of his sound design. Research his design here: **https://blog.native-instruments.com/animals-and-synthesizers**

Portfolio presentation

Documenting and sharing

Keeping in line with all the activities that involved technology, make sure you have notated the examples into your portfolio and explained the process you used in each activity. Learning new software can be incredibly rewarding, but always take screenshots and make recordings. Also use language that refers to the musical components as you investigate electronic music in the future.



■ **Figure 8.63** *A Guide to the Birdsong of South America* album

Use this table to reflect on your own learning in this chapter.

Questions we asked	Answers we found	Any further questions now?
Factual: What is electronic music? What is an ADSR envelope? What is synthesis? What is a vocoder? Which structures exist for deconstructing and understanding electronic music?		
Conceptual: How does rhythm define a genre? How has electronic music brought innovation to creating and performing? How do complementary patterns work with chords? How can acoustic and electronic sounds be combined creatively?		
Debatable: Is playing programmed electronic instruments cheating? Would past composers have used electronic media and its tools?		

Approaches to learning you used in this chapter:	Description – what new skills did you learn?	How well did you master the skills?			
		Novice	Learner	Practitioner	Expert
Organisation skills					
Reflection skills					
Information literacy skills					
Creative thinking skills					
Transfer skills					
Learner profile attribute	Reflect on the importance of being knowledgeable for our learning in this chapter.				
Knowledgeable					

9 Does music have boundaries?

Innovations can test the **boundaries** of traditions and cultures, producing new **identities** and ideas.



■ **Figure 9.1**

CONSIDER THESE QUESTIONS:

Factual: What is a soundscape? What is graphic notation? What does *ekphrasis* mean?

Conceptual: How can musical directions be innovative? How do musicians innovate with both technical and traditional cultures? How has technology connected traditional and contemporary cultures? How are concepts such as rhythm and pitch able to cross boundaries? In what ways are atmospheres painted with sound?

Debatable: Is incorporating another culture's music into your own ethical or appropriate? Can world, or global music redefine boundaries, genres and styles? To what extent can nature be identified as an innovative sound source?

Now **share and compare** your thoughts and ideas with your partner, or with the whole class.

IN THIS CHAPTER, WE WILL…

- **Find out** how musicians and artists are inspired to create works, share their stories and work within different styles of music.
- **Explore** works that incorporate electronics, visual art, inspiration from ancient cultures and even sounds from nature.
- **Take action** in building a vocabulary to evaluate and engage with diverse forms of music; create our own soundscapes with acoustic and electronic sounds; compose with birdsong; and write a musical piece for the planet.

These Approaches to Learning (ATL) skills will be useful…

- Communication skills
- Collaboration skills
- Organisation skills
- Reflection skills
- Creative thinking skills

Assessment opportunities in this chapter:

- Criterion A: Knowing and understanding
- Criterion B: Developing skills
- Criterion C: Thinking creatively
- Criterion D: Responding

We will reflect on this learner profile attribute…

- Reflective: We thoughtfully consider the world and our own ideas and experience. We work to understand our strengths and weaknesses in order to support our learning and personal development.

Prior knowledge

This chapter works on the premise of including all levels of learners. You will find it useful to know:

- how to play and work with scales, modes, chords, bass lines, riffs or ostinatos
- how to play and identify rhythms and structures aurally, from notation and in performance
- how to work collaboratively to express musical ideas with instruments and new forms of technology
- what working within an ensemble means for balance and intonation, but also communication and expression
- ways of analysing music using pitch, duration, texture, structure, tone-colour, dynamics and expressive techniques to document the fingerprints of a style or artist / composer
- how to approach experimenting and presenting musical ideas from research.

Examples, links and referenced materials will guide you further.

KEY WORDS

modes	arch form	motivic development
scales	texture	soundscape
intervals	electronic music	tritone
patterns	orchestration	arpeggio
graphic score	motif	ekphrasis
structure	tone cluster	

Links to: History; Visual Arts; Language

When talking about boundaries that are sustainable, many parallels to History, Art and literature movements can be made. Within History, the rise of certain technological advances sustained entire kingdoms; this can be tied into the blending of cultures or advances in language / writing to bring about new ideas. Visual Art and Languages can use aspects of this chapter to connect with ekphrastic or modern art using elements such as line, shape and colour (actual or onomatopoeic).

Music exploration: Graphic scoring techniques

There are many ways to stretch the boundaries of conventional music-making. Artists and composers can employ improvisation; electronics; evolving rhythmical or melodic material; or reuse all of these techniques within a visual interface. One of the simplest ways to start being innovative with graphic scoring is to collect and experiment with other works. Visit **http://floorjournal.com/2013/07/31/graphic-scores** and listen to 'Graphic Score #29' by Steve Adams for alto sax and electronics.

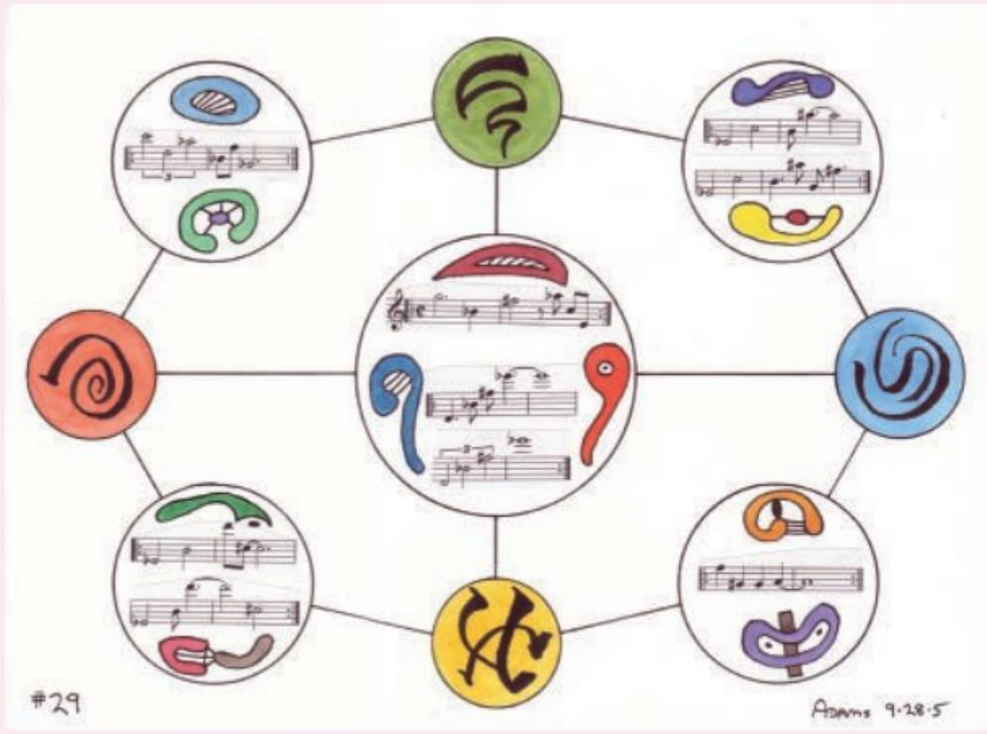


Figure 9.2 'Graphic Score #29'

1 You will notice the small notated **motifs** written with the associated connections to colour and a circular structure. Can you follow along with the audio? Are the motifs communicated well? What do you think is the purpose of the circular structure?

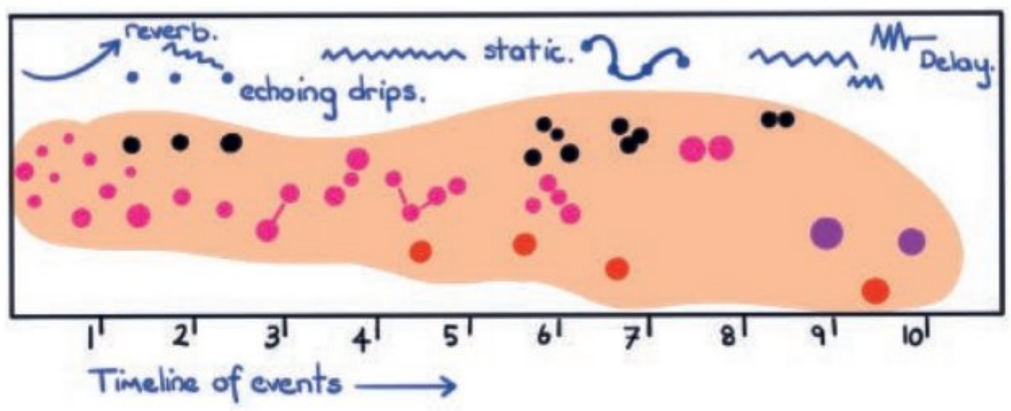
2 In your portfolio, draw your own shapes and notated ideas to create a graphic score similar to #29. Then, begin an investigation of your own. If you have Instagram, you can *curate* material and use social media to inform your creativity. Search with hashtags such as #graphicscores or #graphicscore.

3 Finally, review a collection of graphic scores exploring the interconnected nature of music from the School of Noise: **www.schoolofnoise.com** and University of Michigan's Digital Music Ensemble: **www.simonaa.media/graphic-notation**

WHAT MAKES YOU SAY THAT?

György Sándor Ligeti (1923–2006) was a Hungarian-Austrian composer whose *avant-garde* (or boundary-testing) music was a result of his experimentation with the musical tools around him; the orchestra to the piano, folk and Western art music. Ligeti **developed** a textural technique called *micropolyphony*, which included many different lines or **canons**, patterns of rhythms and tone-colours, at once. This can be seen in a visual way with his electronic 1958 composition 'Artikulation'.

As a class, watch the work, with its graphic interpretation by Rainer Wehinger on YouTube: **https://youtu.be/71hNl_skTZQ**



■ **Figure 9.3** Ligeti's 'Artikulation' first sounds transcription with added ideas for effects of what we call *reverb*, *delay* and *static noise* to shape the sound

As you listen to the work, do not discuss it in terms of whether it sounds 'good' or 'bad'; instead, try to listen to the sounds that are made and make a list on a timeline of what happens.

Then, to show what is happening, **create** a series of shapes and symbols that can be used to **identify** elements of sound in the piece. Place them along your timeline as notes, rhythms, shapes or colours.

Present your work to the class and state **a** what is happening in the music and **b** what you hear that makes you say this.

> *"Ligeti himself imagined the sounds of 'Artikulation' conjuring up images and ideas of labyrinths, texts, dialogues, insects, catastrophes, transformations, [and] disappearances…"*

Hint

Software has developed so far today that you can create similar effects on your computer with modular devices such as Clouds by Mutable Instruments: **www.softube.com/clouds#**



■ **Figure 9.4** Clouds software available from softube.com

Listening strategically: Get an IDEA

The Mahavishnu Orchestra's 'Sapphire Bullets of Pure Love' to 'Thousand Island Park' both represent experimental music with different approaches to developing their structures and **textures**. Using your portfolio within a whole-class setting, your task is to identify the musical components of each track and then to score them graphically on a timeline. Use shapes, colour or word descriptions to outline their structure and changing textures.

What is a soundscape?

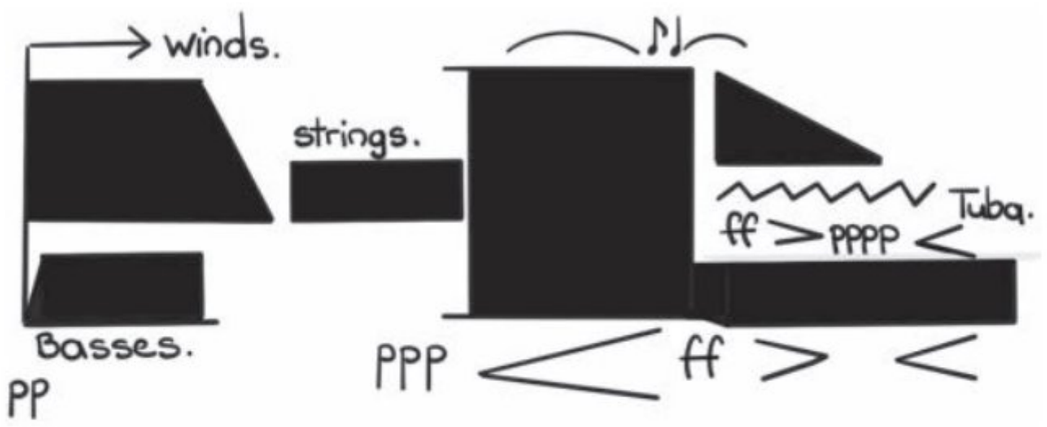


■ **Figure 9.5**

THINKING IN SHADES OF TEXTURES

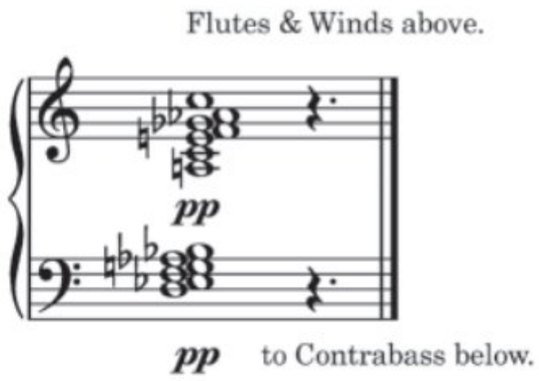
Being able to create a work that effectively places the listener into a new setting, through an innovative use of sound, is an extraordinary achievement. Certain sounds can cause you to connect with memories or trigger emotions. A *soundscape* is a combination of sounds originating from an immersive environment. That is, it relates to the natural acoustic environment around you. This includes sounds from animals (the *biophony*), weather or nature (the *geophony*), humans (*anthropophony*), also controlled sounds, such as musical compositions and language.

György Ligeti's 'Atmospheres' uses this concept of immersive sound. It is an example of a controlled, aural *soundscape*.



■ **Figure 9.6** Graphic score idea made for 'Atmosphères'

'Atmosphères' is a piece for full orchestra using what Ligeti called his *micropolyphonic* texture. This is where there are many moving lines of different lengths, creating a continuously evolving sound. The foreground and background textures of the ensemble blend together and you are likely to hear something called *tone clusters*, where **intervals** of 2nds, 3rds and 4ths coincide or clash. The opening 59-note *tone cluster* is a great example as it is highly dissonant yet creates a strong atmospheric effect.



■ **Figure 9.7** Opening chord cluster from top woodwinds (including bassoon) to bottom 8-contrabasses

THINK–PUZZLE–EXPLORE

Listen to 'Atmosphères' on the playlist or watch the graphic-score version online: **https://youtu.be/JWlwCRlVh7M**. In your opinion, has Ligeti **created** a controlled or natural soundscape? What if we could add oceanic or rainforest sounds to the recording?

In small groups discuss the possibilities of Ligeti's composition as an immersive soundscape **using** the following prompts:

1. **What do you think you know about *soundscapes* or *atmospheric* music?**
2. **What questions or puzzles do you still have?**
3. **How could you explore the topic of soundscapes further?**

You can view Ligeti's score for 'Atmosphères' here: **www.universaledition.com/gyorgy-ligeti-430/works/atmospheres-1215**. Notating sections into your portfolio that you find effective, becomes a great way to reflect on the way Ligeti combines layers and **tone-colour**.

ACTIVITY: Satie, Eno, Einaudi

ATL

- Communication skills: Using a variety of media to communicate with a range of audiences

Erik Satie (1866–1925) has become known, through the championing of modern artists and composers, for his elegant melodies and transcendent piano works.

His piece 'Vexations' (1893–1894) is reinforced by a dramatic colouring in **chromaticism** and repetition. What is most unique about the work is the composer's direction that "… the motif be repeated eight hundred and forty times," at a slow tempo. What results is a work of impossible length and evolving hypnotic sounds. As the motif initially sounds jarring and foreign, through repetition it quickly becomes an atmosphere of beauty.

> *"Consistent among both witnesses and performers are reports of the piece's mystical effects."*
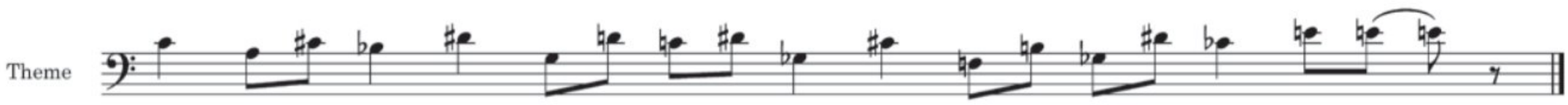


Figure 9.8 'Vexations' motif by Erik Satie

Listen to the track on the playlist or watch a score version on YouTube: **https://youtu.be/sKKxt4KacRo**. Remember the motif above as we compare 'Vexations' to 'Elegy for the Arctic' by Ludovico Einaudi (b. 1955). Many pianists have sought to build on the simple beauty of Satie's works. Brian Eno (b. 1948) directly answered Satie's challenge for '… music that would be a part of the surrounding noises…' in his 1978 ambient album *Music for Airports*. Einaudi's 'Elegy for the Arctic' also manages to capture an elemental simplicity with its repeated **arpeggios** and accompanying *geophony* (natural sounds).
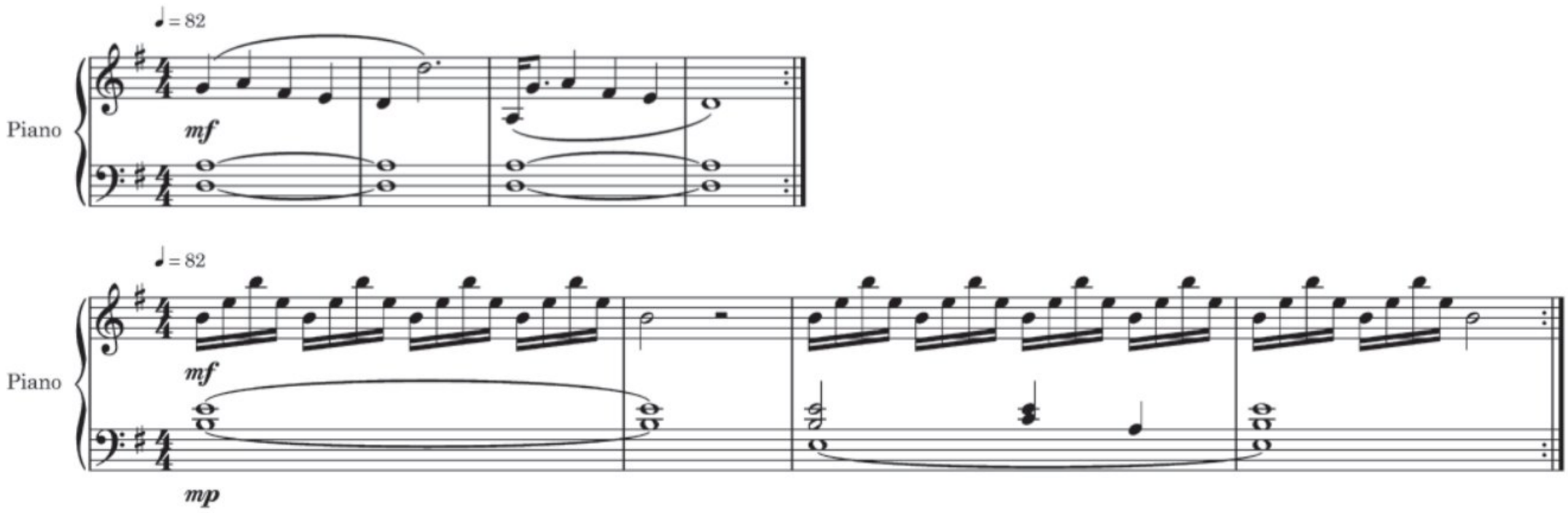


Figure 9.9 Brian Eno's 'Airport' motif and Einaudi's 'Elegy' arpeggio transcribed into G major

Using the three examples opposite, play and then **create** your own motif that can be repeated as a form of ambient soundscape:

1. **Play the motifs on the piano or a tuned instrument. Repeat them as much as you dare! Vary the tempo and combine them with other instruments or devices at different speeds. What do you notice begins to happen?**
2. **Play, write or record your own motif of several notes that you can now repeat. You can use your devices or notation or just record yourself improvising.**
3. **As you perform your motif, layer it with several other slower versions and repeat it as many times as you can (teaming up with a friend works well).**

In your portfolio, write a short reflection that describes the sound, and effect, of your work. As an extension option, you could add recordings of nature in the background, and even project images of landscapes during a live performance.



■ **Figure 9.10**

◆ Assessment opportunities

In this activity you have practised skills that are assessed using Criterion B: Developing skills and Criterion C: Thinking creatively.

ACTIVITY: *Noir* by John Adams

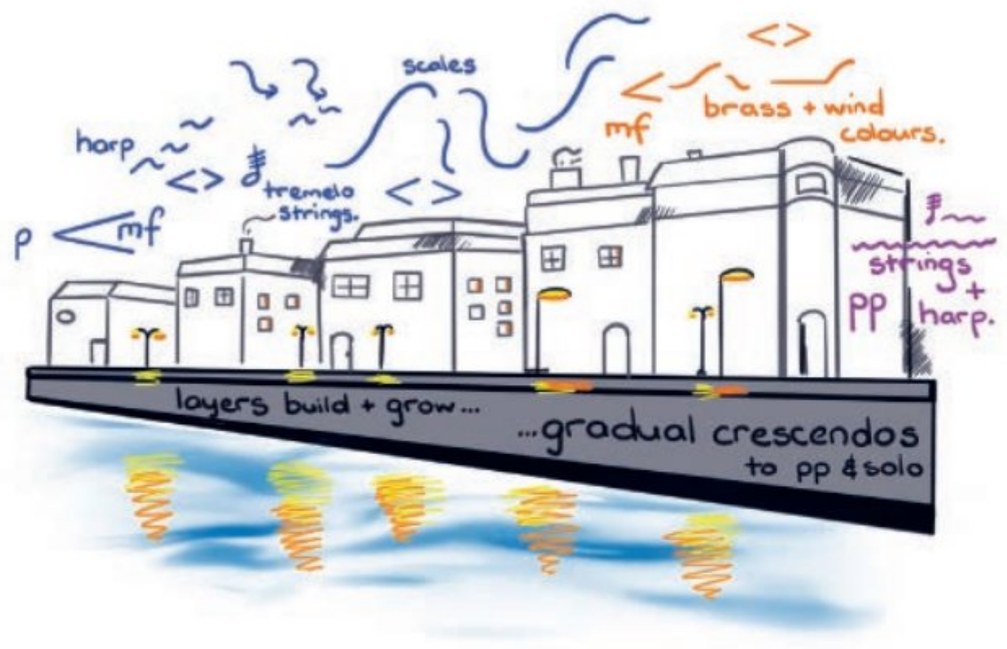
■ ATL

■ Communication skills: Organising and depicting information logically

Learning to listen when there are many layers of sound at the same time is a difficult skill. Sometimes however, the goal is not to **identify** every layer; rather it is to immerse yourself in the total effect of the work. This is the case with John Adam's *Noir City* (2009) and its three movements that were first suggested by his reading of the *Dream* books by Kevin Starr. *Ekphrastic* in nature, the third movement 'Boulevard Night' especially paints an image of '… a very crowded boulevard populated with strange characters' in a cinematic manner. Your task is to **create** a visual timeline where you sketch the changes in texture, as well as identifying points that have a clear and present melody. Aim to **present** your work as a graphic score that could be sent to the composer for future publications of *Noir City*.

◆ Assessment opportunities

In this activity you have practised skills that are assessed using Criterion C: Thinking creatively and Criterion D: Responding.



■ **Figure 9.11** Graphic score representation of Adams' *Noir City III. Boulevard Night*

What does *ekphrasis* mean?



Figure 9.12 What is your response?

FROM THE DESERT TO THE OCEAN

What is *ekphrasis*?

Ekphrasis can apply to many contexts, but it always reflects an artist's response to a given stimulus. It is a Greek word that offers a vivid, dramatic and / or verbal description of an artwork. For example, an *ekphrastic poem* is a poem inspired by a visual work of art. It retells the story captured within the artwork; just in a different format. Naturally, we can extend this idea of an *artistic response* to all creative forms, including dance, theatre and music.

Example 1

Within the poem 'Ode on a Grecian Urn' (**www.poetryfoundation.org/poems/44477/ode-on-a-grecian-urn**), the poet John Keats uses an ancient Greek artefact to imagine the identities of those frozen in time on the urn. It is his descriptive language that repaints the imaginative scenes and the actions of its characters:

> *"Heard melodies are sweet, but those unheard*
>
> *Are sweeter; therefore, ye soft pipes, play on…"*

Example 2

In China, *Kunqu* is one of the oldest forms of dramatic theatre. It combines colour in costume, direction of movement and vocal melodies that express the story of the opera. *The Peony Pavilion* is an example of *Kunqu* and well worth investigating. Thanks to YouTube we can now listen to artist Chang Jing and producer Wang Lu's electronic response to *Kunqu* here: **https://youtu.be/X6lcOqQy1NY**

CREATIVE HUNT

In your portfolio, write a short explanation of the term *ekphrasis.* You can **use** the four prompts below as starters:

1. **What's the main aim of an *ekphrastic* work?**
2. **What are some methods of artistic description (for example, poem to music)?**
3. **Which responses can be especially innovative or creative?**
4. **By blending multiple artistic forms, what have these artists been able to achieve?**

ACTIVITY: *The Desert Music*

ATL

- Reflection skills: Keeping a journal to record reflections

This five-**movement** work is an *ekphrastic* response to Dr Williams' collected poems *The Desert Music*, composed by Steve Reich (b. 1936). Reich uses an overall arch-form (ABCBA) to paint his interpretation of the text through a minimalist style. Listen to the first movement 'I. Fast' on the playlist.
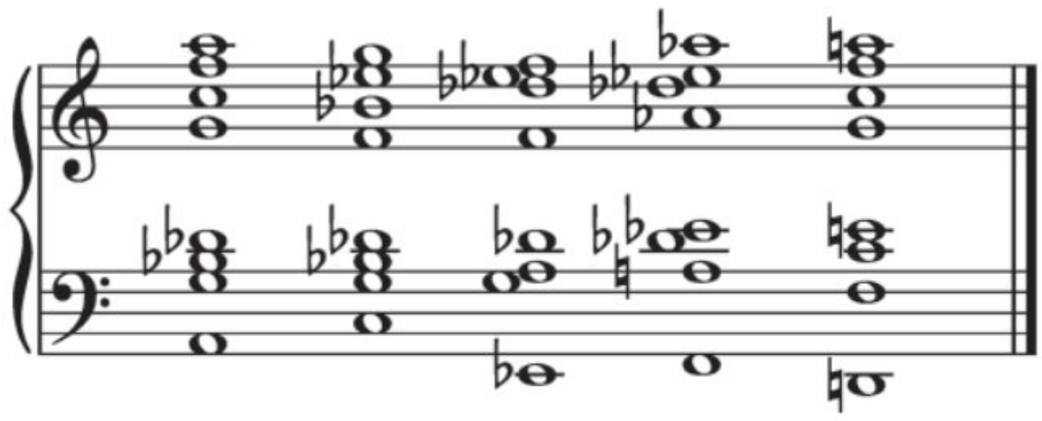


Figure 9.13 Five chords from *The Desert Music* movement 1; they are chromatic clusters of notes that repeat in different patterns

ACTIVITY: 'We Become Ocean'

ATL

- Collaboration skills: Listening actively to other perspectives and ideas

> *"Life on this earth first emerged from the sea. Today, as the polar ice melts and sea level rises, we humans face the prospect that we may once again, quite literally, become ocean."*
>
> *John Luther Adams*

John Luther Adams' 'Become Ocean' for orchestra is an immensely powerful work that describes a moving landscape. Performed by three separate orchestras simultaneously, it demonstrates what is possible in a large-scale *ekphrastic* work.

1. **With the idea of three separate groups of ensembles, spend time listening to the work on the playlist (use headphones).**
2. **As you listen, separate your page into three circles. Inside each circle, identify points of the music that you can describe in words, images or notation.**
3. **Once you have filled out your three-circled diagram, use your descriptions to create an artwork of the music. Use symbols, lines and patterns to outline your #graphicscore.**

This will train you to listen for more complex details inside of a work.

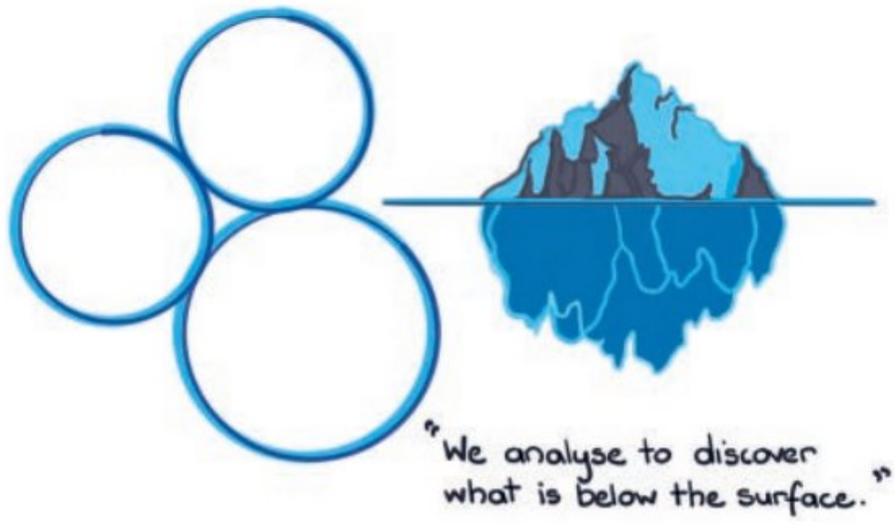


Figure 9.14 Three-circled diagram template

Assessment opportunities

In this activity you have practised skills that are assessed using Criterion A: Knowing and understanding and Criterion D: Responding.

Reich uses a series of pulsing **rhythms** in **quavers** (8th notes) from a collection of five **chords** to interpret his chosen poems. **Using** your classroom piano, device or pitched percussion, perform the five chords in a steady pulse, dividing notes between yourselves; only move to a new note or chord when instructed to from an elected conductor.

What do you notice happens when you all perform the shifts from one chord to the next? Can you feel the change? Did it matter if you got out of time? This is a technique used to move musical textures forward!

Assessment opportunities

In this activity you have practised skills that are assessed using Criterion A: Knowing and understanding.

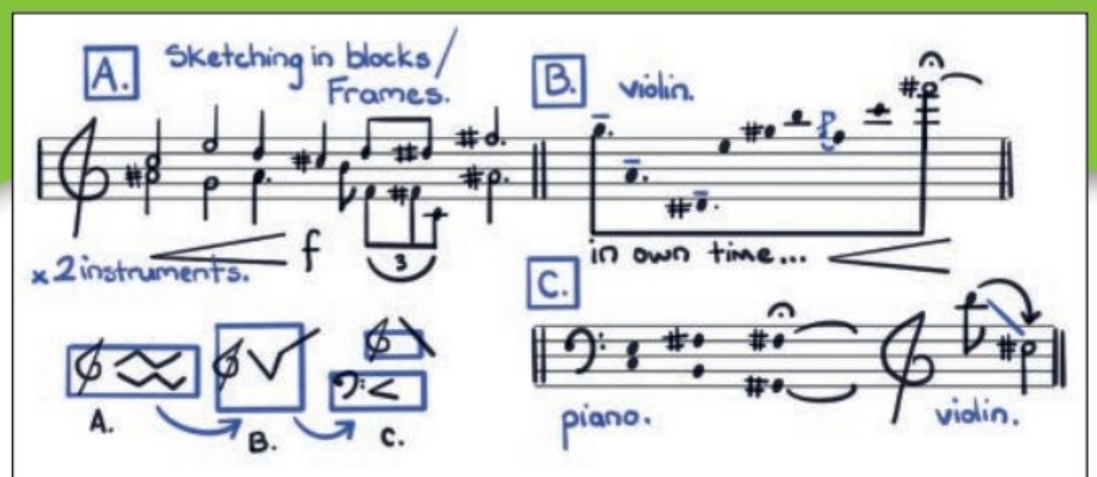
Listening strategically: Get an IDEA

Within this listening activity, you are to follow the scaffolding of **IDEA** with the track of Steve Reich's text-based work *Tehillim*: I, inspired by the book of Psalms in the Hebrew tradition. Instead of writing an extended response, draw up a timeline in your portfolio to create:

1. a graphic score as your own interpretation
2. a timeline with short musical identifications that show the overall form of the work.

Your goal is to have a visual representation of the constant rhythmic elements *or* changes in the texture for this work.

What is graphic notation?



■ **Figure 9.16** 'The Bell' from *3 Compositions of New Jazz* (Anthony Braxton)

HOW DO YOU BRING COLOUR AND VIBRANCY INTO A WORK?

Graphic scoring is something that plays a large part of your interaction with this book. When you interpret music as lines, shapes and patterns, your ability to listen is heightened and you start to perceive music as if it were presented visually in 3D. Your brain can attach sound to shape, colour with timbre, and lines of notes to repeated patterns.



■ **Figure 9.15** Wadada Leo Smith. Visit the scores studied at https://wadadaleosmith.com/philosophy-and-language-of-music/ankhrasmation-gallery

Experimental musician, trumpeter and composer Wadada Leo Smith (b. 1941) is also a visual artist. In the field of contemporary jazz and performance, Smith has created, improvised and illustrated music. In fact, his language scores outline colourful and symbolic representations of lines, shapes and patterns.

View a performance from his *Four Symphonies* (2017) here: **https://youtu.be/u3Qy7BgVudI**. Smith's early work 'The Bell' comes close to a combination of traditional and technical innovation by combining targeted notes and 'frames' of notes on manuscript paper.

QUESTION STARTS

1 **In small groups, brainstorm a list of at least 12 questions about the topic of *graphic notation*. Use these question starters to help you generate interesting points of view:**
Why use graphic notation? What are the reasons for incorporating graphics into music? What would change if…?
2 **Review the brainstormed list and identify the questions that seem the most interesting. Write down in your portfolio the different points of view from your group.**
3 **Reflect on any new ideas you have about *graphic scoring* that you didn't have before.**

"Five or six years ago, I discovered fractals. I was watching a scholar's TED Talk, and after listening to his lecture on fractals, I realised that rhythm units are like fractals. They are self-generating objects that, no matter how many times you play them, they regenerate themselves over and over and over."

Wadada Leo Smith

EXTENSION

Ensemble performance: 'Sanctuary' by Frank Ticheli

This work was commissioned by the Michigan School Band and Orchestra Association in honour of H. Robert Reynolds. It includes lyrical writing across the whole ensemble and it is easy to distinguish the moving lines as they enter and exit. Watch a score version on YouTube at **https://youtu.be/1xx9lDhd4V0** and collect examples of melodic lines to add to your portfolio.

> "The word *sanctuary* conjures a rich array of images [and shapes]. It can imply a place of solitude, comfort, rest, prayer, protection. It can suggest a place that is strong and imposing or one that is very small and private. I believe all of these images are suggested at one point or another in the music."
>
> *Frank Ticheli*

Graphic scoring is definitely a skill that brings colour into a performance.

ACTIVITY: Traditional and technical

ATL

- Organisation skills: Using appropriate strategies for organising complex information

Watch the performance of Egyptian song 'Aziza' by the Israeli Andalusian Orchestra at: **https://youtu.be/DOF11fRF2V0**. Composed in 1955 as a *Maqtu'a* (instrumental work) by Mohammed Abdel Wahab, it captures certain musical techniques that we can turn into graphic notation and experiment with.

To bring colour and vibrancy into our experimental work, we need to perform each of the following blocks of phrases taken from the piece 'Aziza'. By chopping up the work into a series of playable patterns, we can attribute a shape or colour to each one:

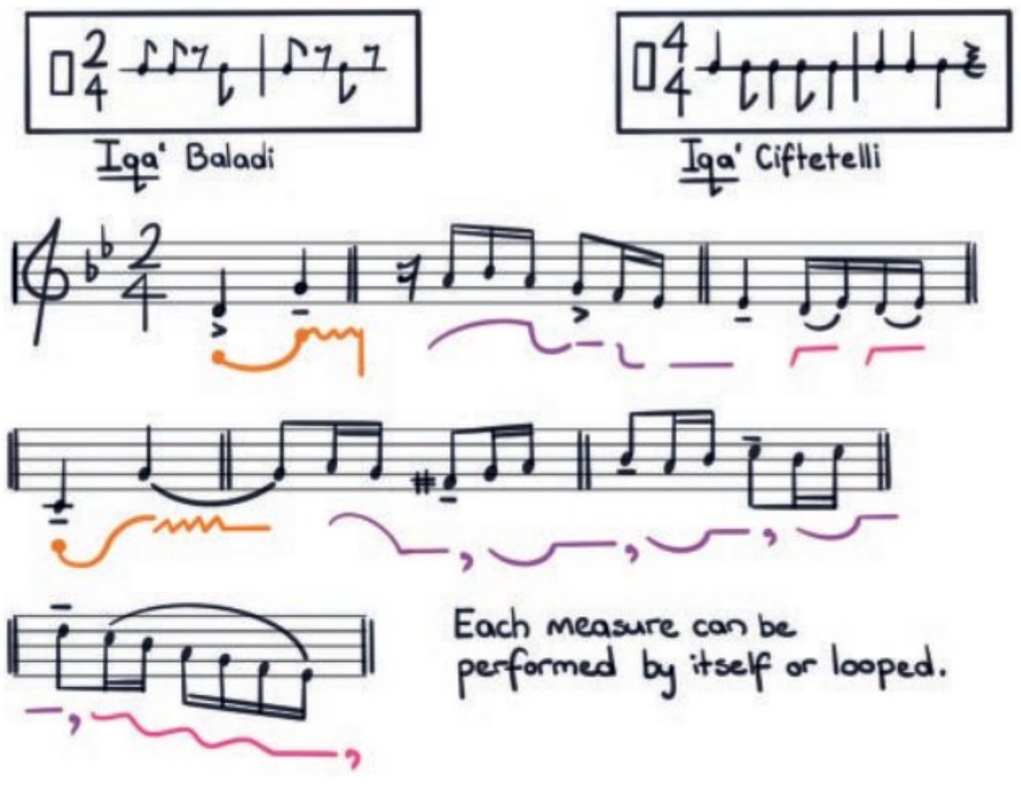


Figure 9.17 Musical 'blocks' with rhythmic cycles *Baladi and Ciftetelli*

1. **Using your instrument or device, play the phrases one by one. Discuss with a friend what shape or colour each phrase could be, and then copy them into your portfolio.**
2. **Experiment renotating each theme as just a *colour*, *line* or *shape*.**
3. **Record the melodic phrases into software such as GarageBand or SoundTrap. (Make sure you record or perform them as small blocks, stopping at the end of each one.)**
4. **Now rearrange those blocks to create an entirely new melody (you can also loop them).**
5. **Finally, go back to your portfolio where you notated your *colour–line–shape* versions of each phrase, and create a graphic score of your newly rearranged piece.**

What does your new score look like? Does it resemble Wadada Leo Smith's approach? Or something more linear?

The best part is that there is no right or wrong answer; only that you have found another method to deconstruct and experiment with music visually!

Assessment opportunities

In this activity you have practised skills that are assessed using Criterion B: Developing skills and Criterion C: Thinking creatively.

In what ways are atmospheres painted with sound?



■ **Figure 9.18**

Listening strategically: Get an IDEA

This section will blur the lines between analysis and critical thinking by developing your own ideas of comparing two different composers **imitating** the night sky. Follow the scaffolding by **identifying**, **describing**, **explaining** and **analysing** each discovery you make, filling a page in your portfolio for each piece. Sketch / draw / copy the themes below, and add your own annotations. Finally, hold a group discussion where you all present your evidence and argue how each approach is *innovative* in presenting an 'atmosphere of the night sky'.

'Stars Above Us All' is a 2013 orchestral work written by composer Matthew Hindson (b. 1968). A free perusal score can be viewed here: **www.fabermusic.com/music/stars-above-us-all-the-6840/score**. What we will be listening to is his writing for the instrument called a *celeste* to depict its onomatopoeic title.
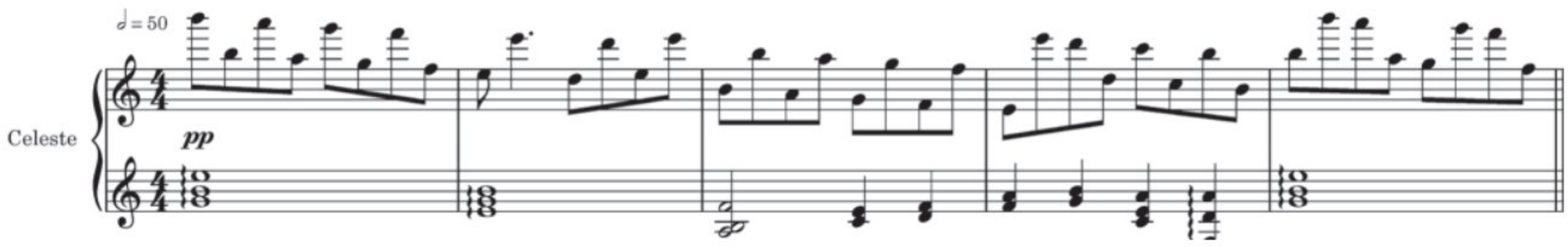
The composer Joe Hisaishi (b. 1950) is known for his work on the *Studio Ghibli* films. His piece 'Cicada Night' from the 2014 film *The Tale of Princess Kaguya* is our comparison work, again based around a night-time scene. Here you will find a melody played on the *koto* (traditional Japanese instrument) highlighting improvisatory phrases, slides, bends and trills around the *Kaguya* theme:

1. What is similar between the two approaches to presenting an 'atmosphere of the night sky'?
2. Using musical elements of *texture*, *tone-colour* (*timbre*) and **pitch**, how does each composer represent their musical atmosphere?
3. What do you find in listening to the two works? Are they innovative or do they stretch beyond traditional boundaries?
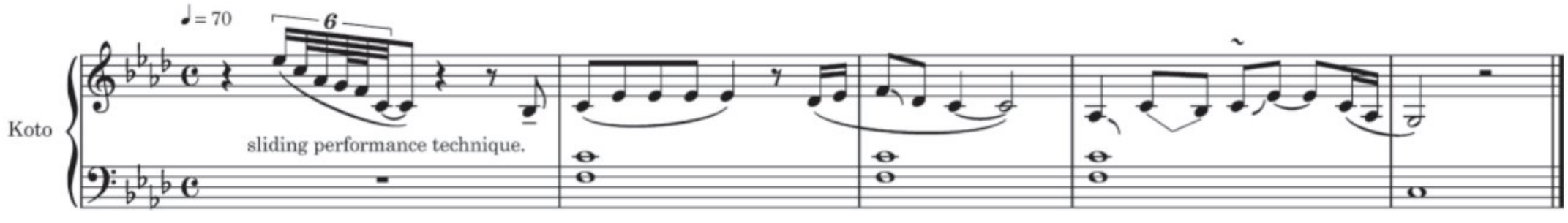
Hint

Listen to how the instrument is played, or how the layers around the main instruments change.

This process of comparison is a vital skill when listening to works. Keep in mind the acronym **IDEA** when you discuss these works as a class.



■ **Figure 9.19** 'Stars Above Us All' mm19–23 excerpt with octave pattern in the right hand
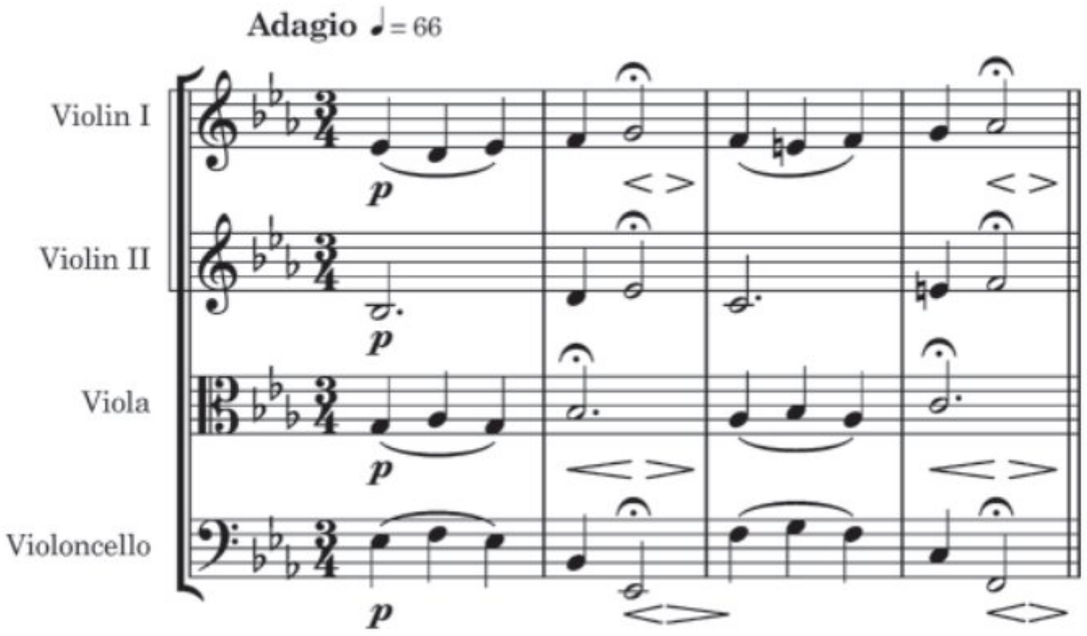


■ **Figure 9.20** Theme from *Princess Kaguya*

INSPIRATION TO INNOVATION

The primary colours of red, yellow and blue are a foundational element for design. However, what about music? Spend some time thinking and sketching in your portfolio what you consider to be 'primary colours' in music.

In 2016, cellist and composer Peter Gregson (b. 1987) published his EP entitled *One*, with the first track named 'Primary Colours'. You can listen to this on the playlist. He chose to use the **string quartet**, made up of violin 1, violin 2, viola and violoncello (cello for short). However, instead of following a more classical approach in creating for the string quartet, such as composer Franz Joseph Haydn would…



■ **Figure 9.21** Haydn's *4th Quartet in B♭ Major* 'Sunrise'

… Gregson uses these string instruments like a painter, with different shades and tones of blue. Listening to the track on the playlist, it is clear that Gregson has a creative process that is innovative and extends the boundaries of traditional string-quartet writing:

1 He treats the music like he is painting a canvas.
2 When writing for a particular instrument, he thinks creatively about each layer of sound.
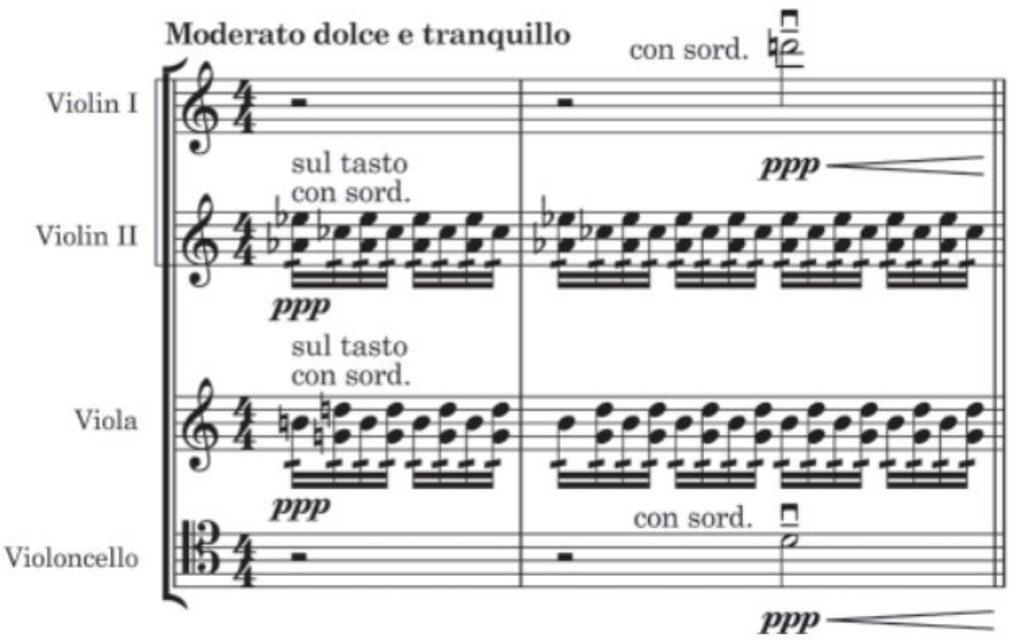
ACTIVITY: Gregson *Quartets No. 1*

■ ATL

■ Creative thinking skills: Creating original works and ideas; using existing works and ideas in new ways

1 **Using a piano or device, sketch an idea based on the weather right now. You can improvise with sustained chords, single notes or small phrases.**
2 **Ask yourself: What would this look like on paper? What would it look like if I added four more layers? Would they occur at the same time? Or one after the other? Would they be different or the same?**
3 **Arrange sections together using notation software like MuseScore, or record the layers in GarageBand or SoundTrap.**

Gregson uses a technique called *tremolo* that is layered across the quartet. Now watch Grieg's 'String Quartet No. 1 in G minor, Op. 27' with the same technique at **https://youtu.be/OM9hdCpdcqc?t=653**. Using your ears, Grieg's example and Figure 9.22, begin sketching into your portfolio. You can research more string techniques for your 'weather sketch' at **www.vsl.co.at/en/Violin/Notation**. This is how we learn to **create** with different colours!



■ **Figure 9.22** Szymanowski's 'String Quartet No. 2, Op. 56' with bowed tremelo

◆ Assessment opportunities

In this activity you have practised skills that are assessed using Criterion A: Knowing and understanding and Criterion C: Thinking creatively.

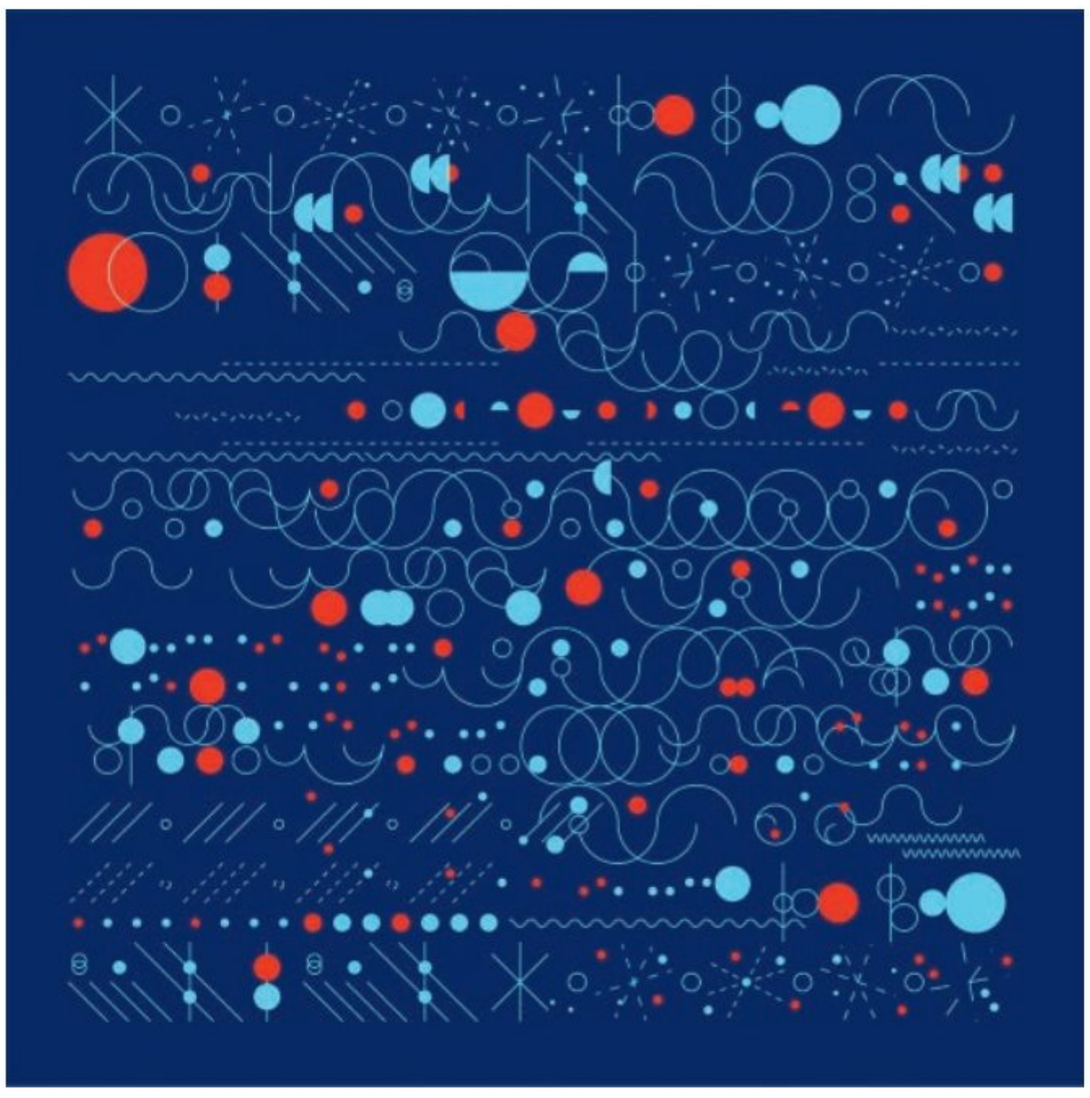
EXTENSION

Ensemble performance: *Paper Cut* by Alex Schapiro

In this 2010 commissioned work, students engage with an electronic track as they experiment making sounds with paper, before picking up their instruments.

> "Music isn't just melody; it's rhythm and texture as well. The unusual element of paper and the myriad sounds that can emerge from something so simple ... [it] opens everyone's ears to the sonic possibilities found among everyday objects."

The unique feature of this piece is how it **creates** an immersive soundscape through a rhythmic performance with paper. Watch a performance of *Paper Cut* on YouTube and reflect on its combination of sounds: https://youtu.be/qGhphk3orEY



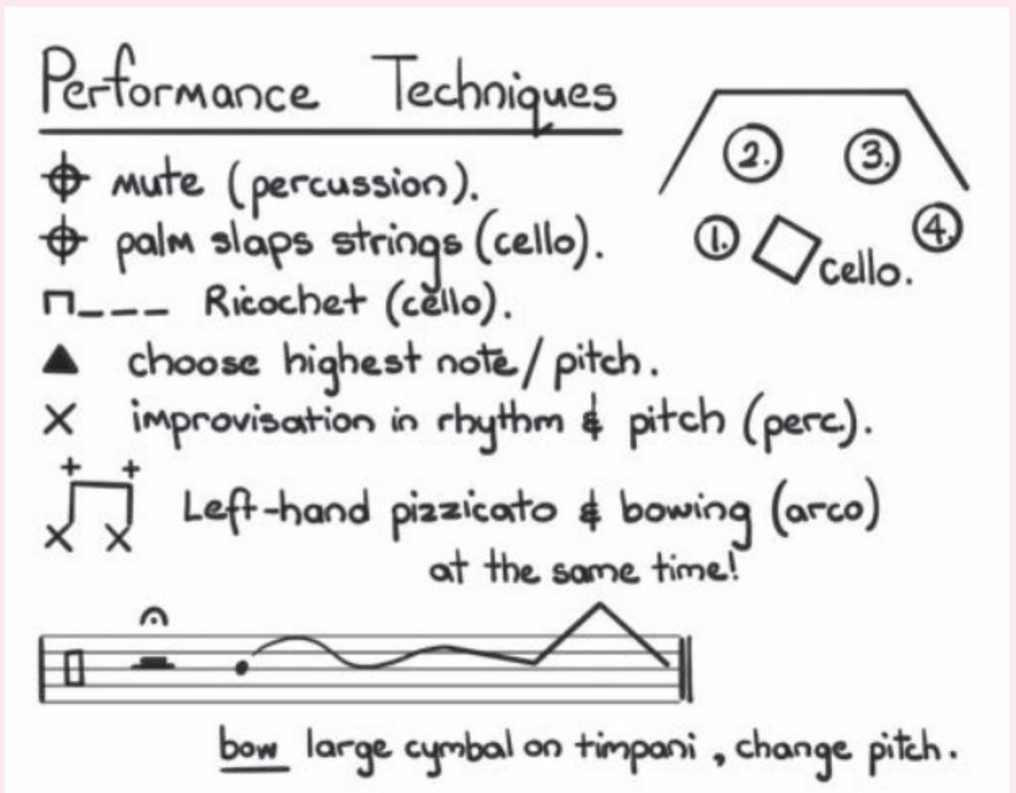
■ **Figure 9.23** IB Alumni 'Drum & Lace' has produced her own works with graphic score: https://drumandlace.bandcamp.com/album/semi-songs They were composed to create an intimate space that '... allows for the different instruments' voices to speak to one another'

Music exploration: *Snow in June*

Creating music that paints a scene, or retells a poem (*ekphrasis*), needs an approach with a focus on experimentation. In the examples so far, artists and musicians alike have combined their skills to create visual and aural atmospheres of nature or colour. In his 1991 piece *Elegy: Snow in June*, composer Tan Dun (b. 1957) combines both to express the 13th Century Chinese drama *Dou-Eh* by Kuan Han-Ching.

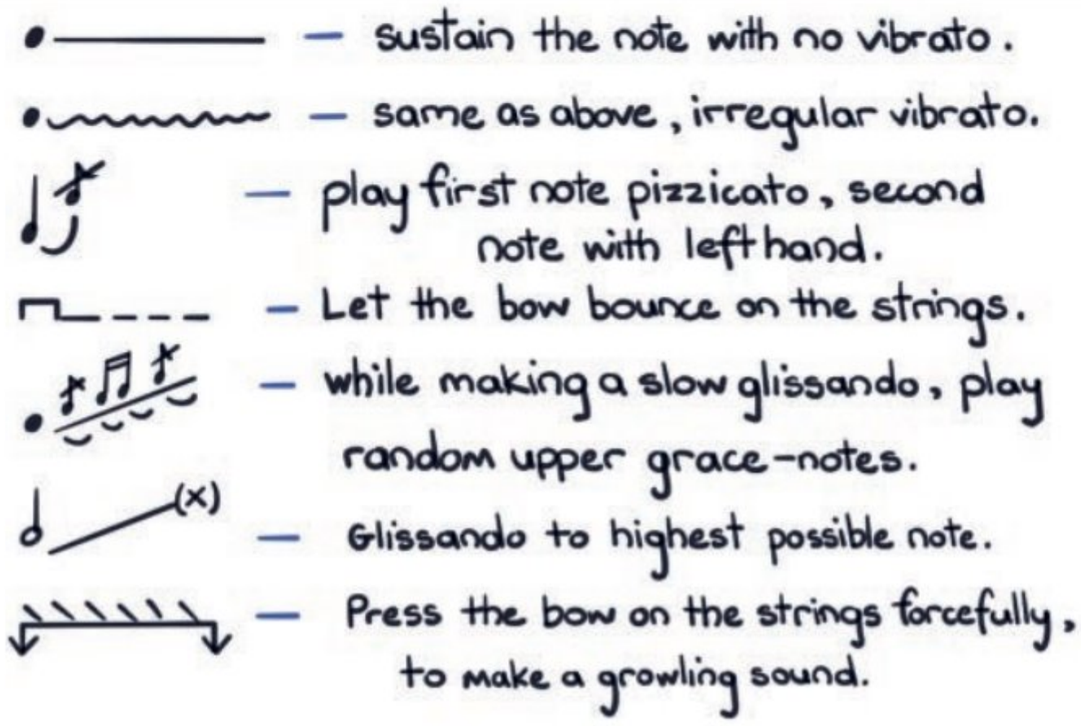
> *"Dou Eh is executed for crimes she did not commit. Even nature cries out for her innocence: her blood does not fall to earth, but flies upward; a heavy snow falls in June; and a drought descends for three years."*

Using the notation Tan Dun created with four percussion groups, copy the symbols into your portfolio. Then, using adjectives, describe the sounds of each symbol as you listen to the work. These are what we call *performance directions*, presented as a key at the start of a score.



■ **Figure 9.24** Performance directions from *Snow in June*

How can musical directions be innovative?



■ **Figure 9.25** String notation key from Tan Dun's 'Eight Colors for String Quartet'

IDENTIFYING THE TECHNIQUES OF MUSICAL DIRECTION

In groups, listen to the track 'Eight Colors for String Quartet: Cloudiness' by composer Tan Dun (b. 1957) on the playlist. The score itself begins with a series of instructions to the performers (see Figure 9.25 above).

Born in a village in central Hunan, China, Tan Dun has led an extraordinary life, from planting rice during the Cultural Revolution (1966–1976) to studying composition at Columbia University and receiving several international prizes for his works. Dun is able expertly to combine Eastern and Western music, **orchestrate** emotionally charged melodies (such as in the 2002 film *Hero* starring Jet Li) and then collaborate on projects that explore these same concepts within the framework of *atonality*.

> *Atonality is music that does not have a central key, or home note, that our ear returns to. Methods of composing this type of music include chance, mathematics or a matrix of predetermined chromatic pitches.*

Tan Dun's works combine Chinese folk music, the techniques of *Peking Opera* and atonality. Additionally, the string techniques are also adapted from vocal styles found in Peking Opera. This is reflected in the notated directions of Figure 9.25, and demonstrates how 'Cloudiness' creates an onomatopoeic soundscape of sounds over a low drone in the violoncello.

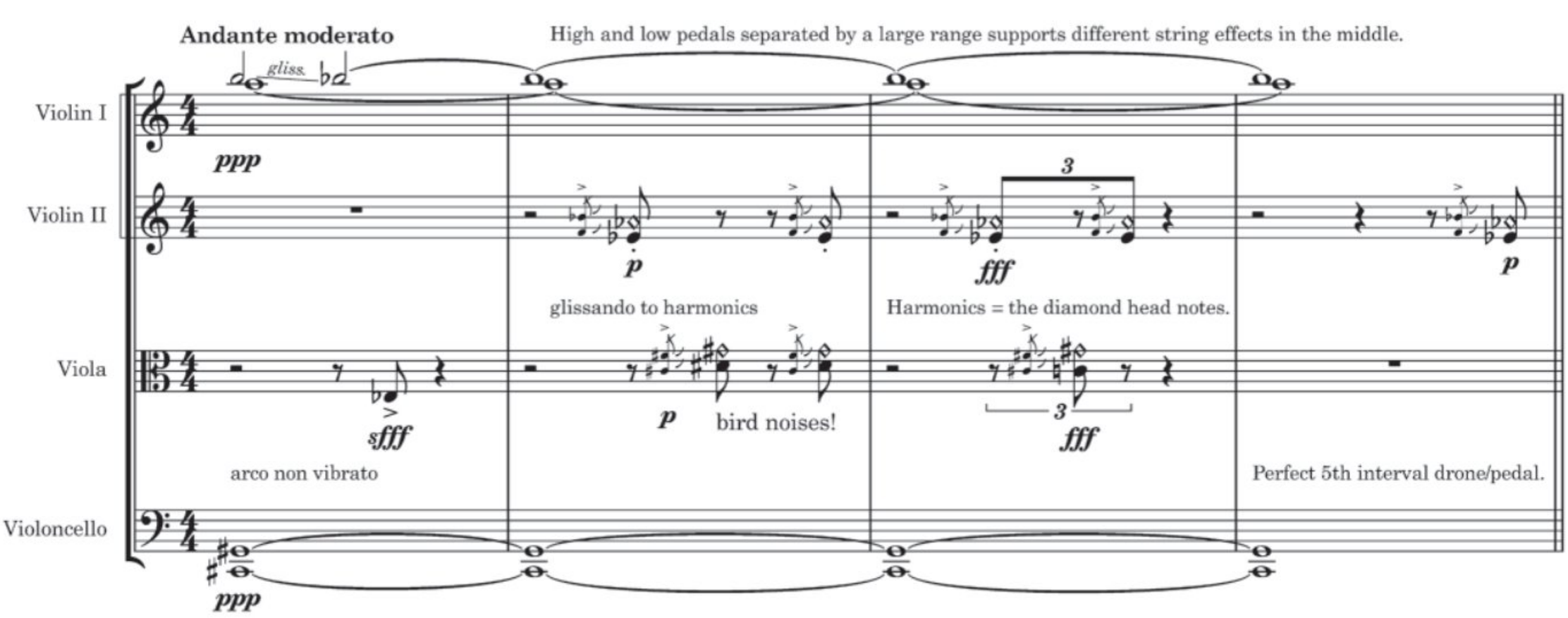
THINK–PAIR–SHARE

In your portfolio, answer the following questions in as much detail as you can, then compare your answers with a partner:

1. **How effectively does Tan Dun create an atmosphere of 'cloudiness' in his Eight Colors for String Quartet?**
2. **What can you hear in the strings that gives you the impression he is painting with sound?**

"I want to find ways of remaining open to my culture and open to myself"

Tan Dun



■ **Figure 9.26** Excerpt from 'Eight Colors for String Quartet: Cloudiness' m9–11 with glissandos and harmonics

ACTIVITY: Gregson *Quartets No. 2*

ATL

- Creative thinking skills: Applying existing knowledge to generate new ideas, products or processes

If you were to compose a piece of music today for an ensemble, would you include electronics? How would you add instructions to your score for the performer? Peter Gregson, in his second EP, combines the colours of the string quartet with that of a synthesiser playing arpeggios:

> *"There was a time not all that long ago when a civil war of sorts was being waged between classical traditionalists and those willing to consider a role for electronics and synthesizers within classical music. Yet such a separation doesn't appear to exist for [Gregson] at all."*

Listen to *Quartets: Two* EP by Peter Gregson on the playlist. Gregson's piece 'Sequence (Four)' is reminiscent of many works, with a Philip Glass-ian **progression** of i (D minor)-VI (B♭ major)-III (F major)-VII (C sus4). Play this progression yourself **using** the chart below.

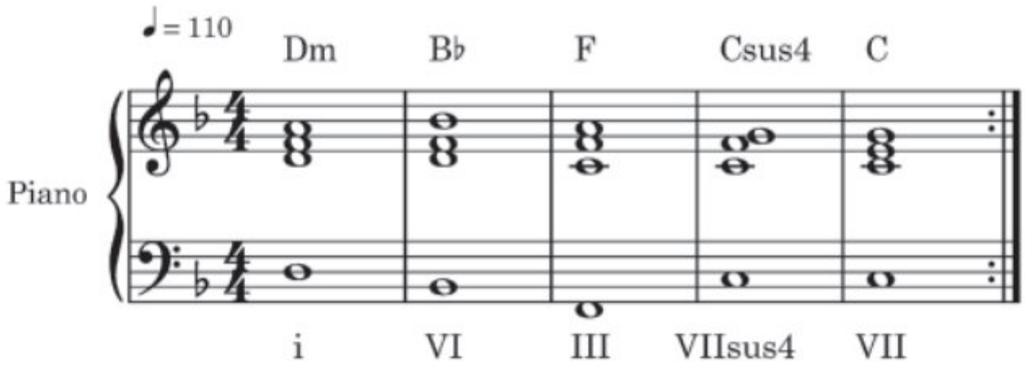


Figure 9.27 Minor chord formula progression with suspension (sus4)

Gregson also provides a performance direction for the synthesiser so it can be set to the correct tone-colour or timbre. Here the free synthesiser Helm has been used to recreate the arpeggio effect, with both a square and sawtooth wave using the ADSR settings of A3.D3.S10.R4. If you have a device, Synth One does a fantastic job, as well as Alchemy inside of GarageBand.

After performing the chords and finding a synth setting that you think works, discuss with a friend how you might perform another layer on top, utilising longer notes like the violins.

Discuss how you would notate this and what your performance directions to another musician would be. This is where you **create** your own system of documenting synthesiser settings plus the actual notes to be performed. Share them with your class for peer evaluation; or, better yet, perform it live!

Assessment opportunities

In this activity you have practised skills that are assessed using Criterion B: Developing skills and Criterion D: Responding.



Figure 9.28 Helm synth with arpeggiator (ARP) turned on ready to perform

ACTIVITY: Watercolour experiments

ATL

- Reflection skills: Developing new skills, techniques and strategies for effective learning

Tan Dun is an extremely creative composer whose works include sounds, rhythms and techniques from Chinese folk music, as well as the Western orchestral tradition. In this activity, we will investigate the 7th movement of 'Eight Colors for String Quartet: Drum and Gong'. Here Tan Dun instructs the strings to imitate percussion instruments by hitting and plucking across the fingerboard.

Get into small groups and brainstorm together which instruments *you play* that could be instructed to perform like drums or gongs. (If you do not play an instrument, start with a piano, guitar or tuned percussion.)

Your mission will be to innovate a creative series of performance directions that *describe how* to play that instrument in a percussive way.

1. **Start by playing something simple like a melody or rhythm. Then try to change it by tapping the notes, sliding on the strings or changing how breath is used to produce a tone. Experiment and be brave with the noises you make!**
2. **Now create a series of symbols that will act as a 'key' for any performer to understand what your specific directions would mean. (You can also involve colour.)**
3. **Present your key in your portfolio with a short description of how to play each 'sound'.**

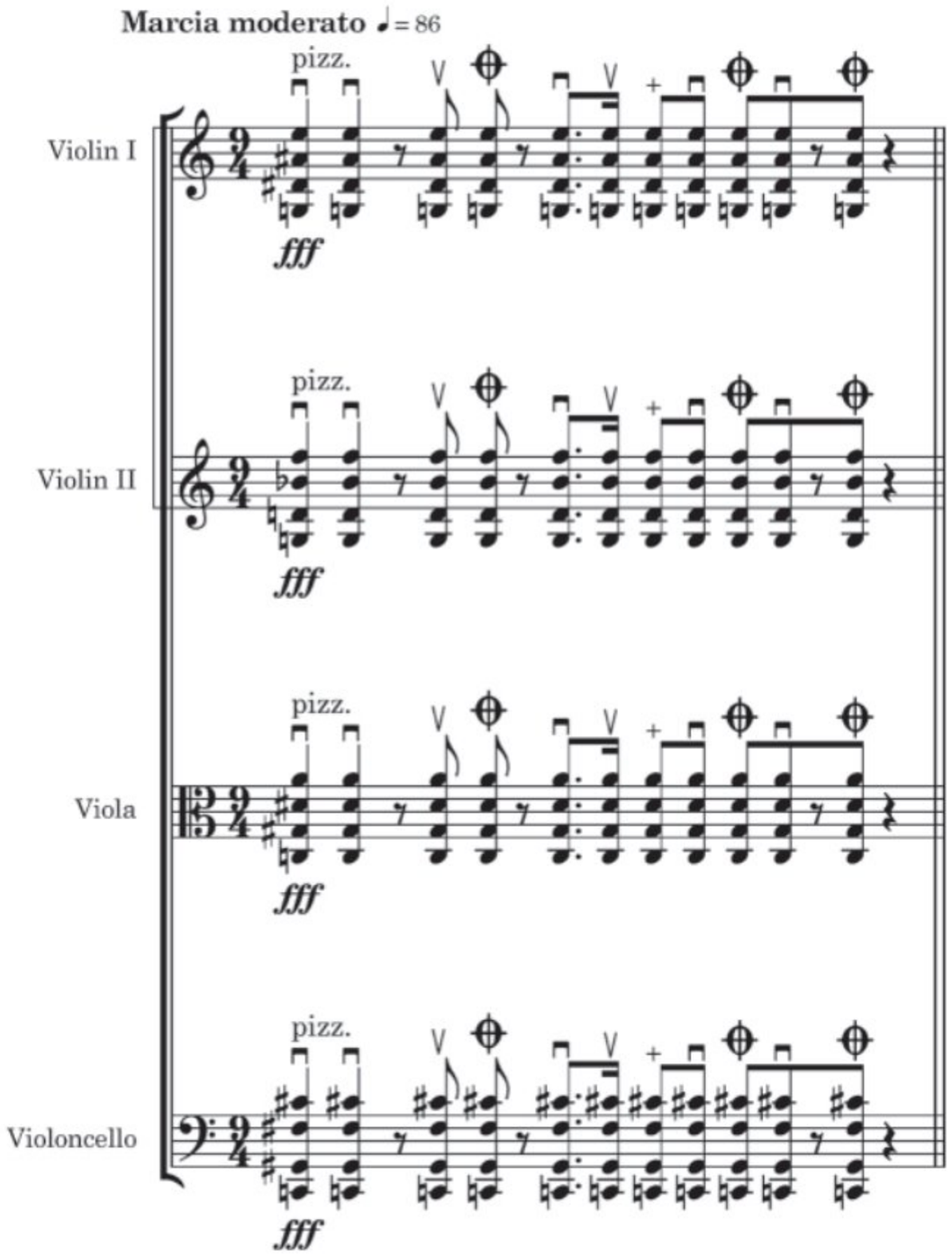


Figure 9.29 'Drum and Gong' measure 1 showing strings striking large pizzicato chords

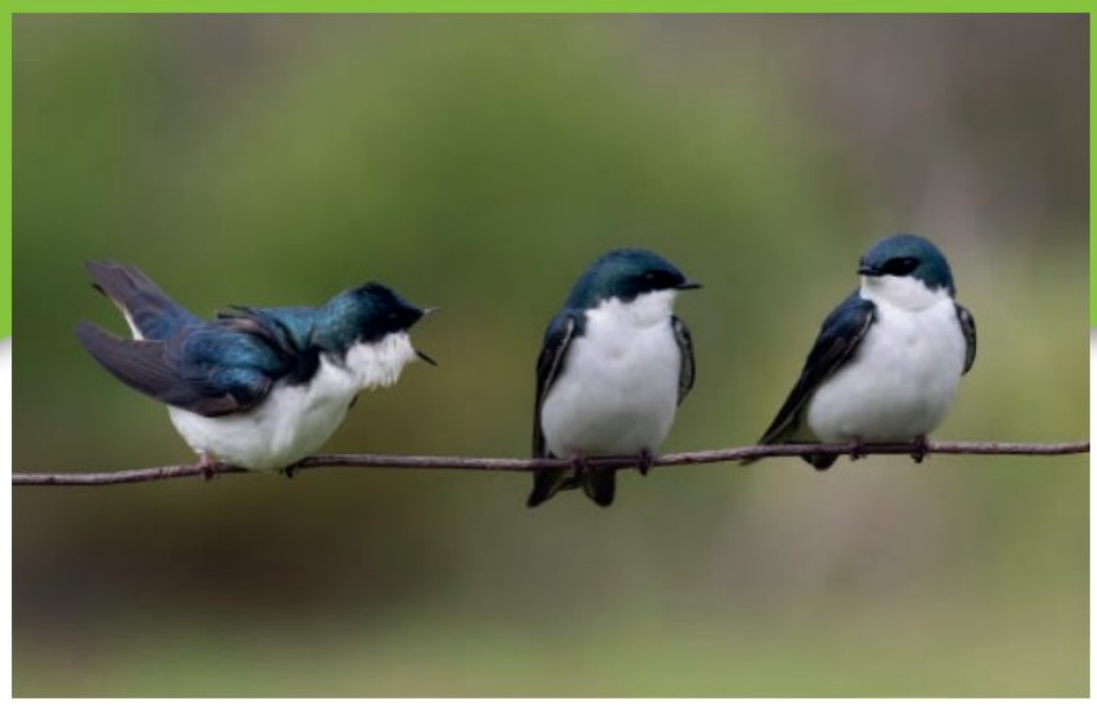
Assessment opportunities

In this activity you have practised skills that are assessed using Criterion A: Knowing and understanding and Criterion C: Thinking creatively.

EXTENSION

Research in more detail the musical techniques of *Peking and Beijing Opera* to add to your portfolio. Use this video as a starting point: **https://youtu.be/ka5z3uYctug** and Yandang Mountain (雁荡山) **https://youtu.be/HAo8Eyia420**

To what extent can nature be identified as an innovative sound source?



■ **Figure 9.30**

NATURE IS OUR SOUND SOURCE
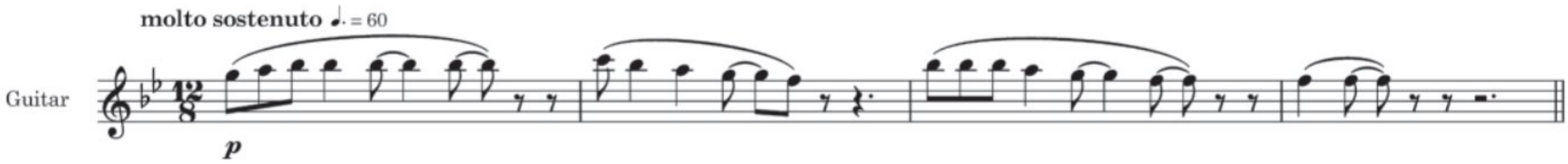
Djilile is an Aboriginal word translating to 'whistling duck on a billabong', from the ancestral people of Australia in Northern Arnhem Land. Worked into a cello and piano piece in 1986 by Peter Sculthorpe (1829–2014), it is an indigenous **chant** transcribed by Professor A.P. Elkin in the 1950s. Since then, many different arrangements of the tune have been performed, from solo guitar to chamber strings and full orchestra. The tune itself is featured in Sculthorpe's 1988 landscape masterpiece 'Kakadu', which is on the playlist along with the solo piano version of 'Djilile'.

> *"… Kakadu National Park in Northern Australia [is an] enormous wilderness area… and in it may be found the living culture of its Aboriginal inhabitants… The melodic material in* Kakadu*, as in much of my recent music, was suggested by the contours and rhythms of Aboriginal chant."*
>
> *Peter Sculthorpe*

Listen to the solo piano version of 'Djilile' and then follow directly onto the work entitled 'Kakadu' (around the 6'35 mark). Whereas the music is not meant to paint the picture of a 'duck', the open and repeated nature of the chant suggests a limitless expanse of land that is ancient and powerful. This is accomplished through the rhythm and contour of the melody. Take note, as the shifting phrases are not always exact copies of each other.

! Take action

- ! Find out how musicians and artists are inspired to share their stories and work within different styles of music.
- ! Explore works that incorporate electronics, visual art, ancient cultures and even sounds from nature.
- ! Raise awareness for our planet. Create songs or soundscapes with acoustic and electronic sounds. Compose with birdsong, sample natural and industrial sounds or write a musical for a cause.
- ! Choose an environmental issue that you are passionate about. You can use music to raise awareness for this cause by writing a song, composing a soundscape to moving images or a holding café-style concert. Use your skills to connect with your cause in innovative ways.



■ **Figure 9.31** Main theme of 'Djilile' mm1–4

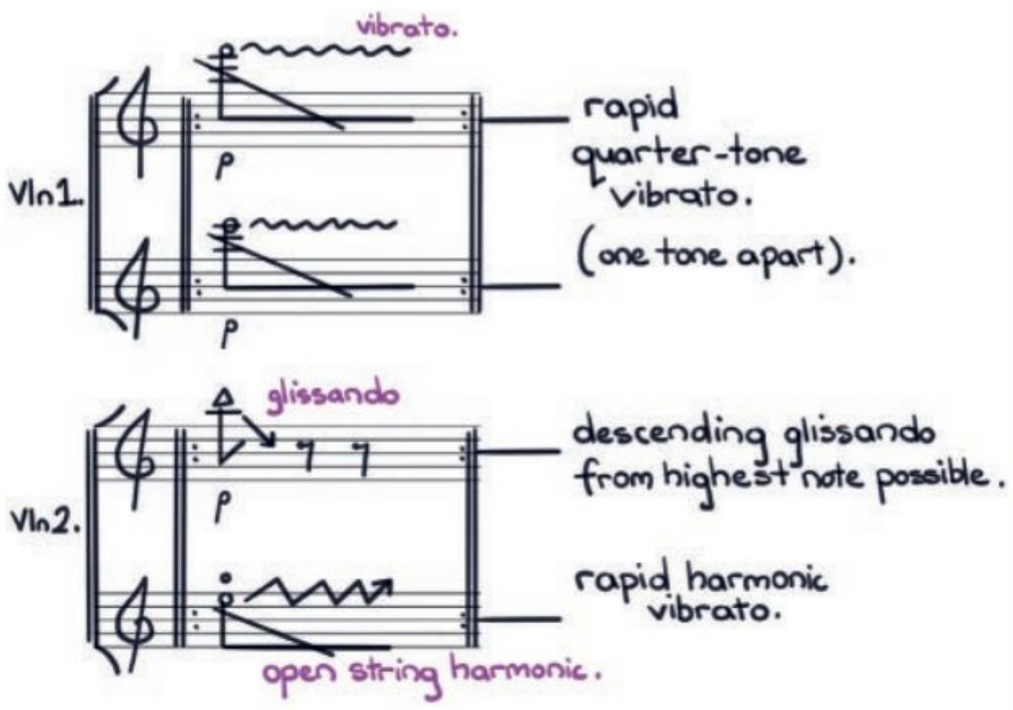
CONNECT–EXTEND–CHALLENGE

As a class, discuss what you can **identify** and describe in both recordings of how they may use nature as an innovative sound source. Then in your portfolio, reflect on the discussion by answering the following prompts:

1 **Connect: How are the ideas and information presented connected to what you already knew about soundscapes, or using nature as inspiration?**
2 **Extend: What new ideas did you have that pushed your thinking in new directions? Were you inspired by the works to investigate more of Sculthorpe's music?**
3 **Challenge: What is still challenging or what questions do you have now? Was Sculthorpe truly innovative in capturing the Australian landscape on a musical canvas?**

EXTENSION

Sculthorpe later uses *extended* string techniques in 'Kakadu' to **create** the effect of thousands of birds singing and squawking. The violins and cellos combine with harmonics (*flageolet*) and very high notes that result in a bird-like cacophony.



■ **Figure 9.33** 'Bird' extended string techniques from Sculthorpe's 'Kakadu'



■ **Figure 9.32**

Catalogue of Birds, or *Catalogue d'Oiseaux*, is a work for solo piano by Olivier Messiaen (1908–1992). Composed of 13 pieces, they are based on the calls of bird species native to France. Each movement, or book, has the title of a bird from which the principal material is derived. Messiaen's performance directions would also ask performers to immerse themselves in the mode of attack and tone-colour (timbre) of the birds:

> *"As the pianist is required, in his cadenzas (solo sections), to imitate the mode of singing of a large number of birds, I recommend several early morning walks in the woods, in Spring, to get to know the original models."*

Through collecting various bird calls, notating and cataloguing them, Messiaen would use them as springboards for his compositions. This is just one reason that your portfolio is so important! You never know where your ideas may take you:

> *"As well as notations made outdoors in the heart of nature, Messiaen's notebooks also contain a great number of musical sketches that were made from recorded birdsong. These sources were ornithological collections that were commercially available on record – such as* Ludwig Koch's Songs of Wild Birds *(1936) and* Songs of British Birds *(1953).*

For example, in the final movement of *Catalogue d'Oiseaux*, 'Le Courlis cendré', there is a direct quotation from a curlew's call taken from *Songs of Wild Birds*. Listen to the excerpts online: **https://blogs.bl.uk/sound-and-vision/2016/12/messiaen-and-the-songs-of-wild-birds.html** or on the playlist. Finally, visit **www.oliviermessiaen.org** and click on 'More' and then 'Birdsong' to see how the recordings of birdsong were translated into notation by Messiaen.

ACTIVITY: Birdsong

ATL

- Organisation skills: Selecting and using technology effectively and productively
- Creative thinking skills: Creating original works and ideas; using existing works and ideas in new ways



Figure 9.34 Hollis Taylor's book *Is Birdsong Music?*

Your task is to **create** a small musical work **using** birdsong as your inspiration. However, you are not alone in this task. Author, musician and composer Hollis Taylor has created an amazing resource of birdsong and transcriptions at www.piedbutcherbird.net/4-notes-and-calls.html for you to investigate.
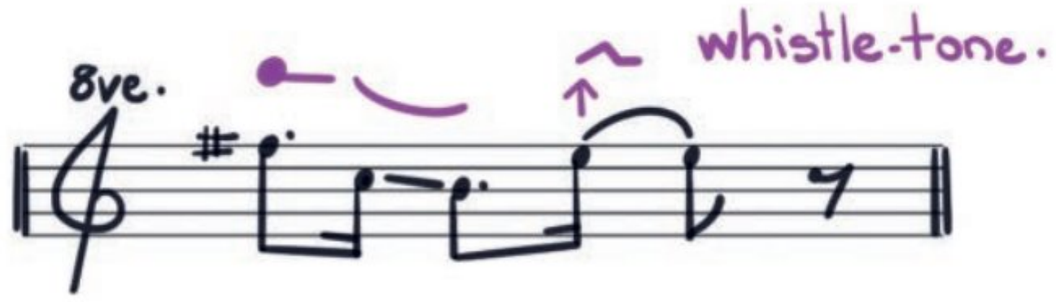


Figure 9.35 Hollis Taylor's example transcription and graphic representation of birdsong 2010 variant

Creating a work inspired by birdsong

1. **In your portfolio, notate and describe the birdsong or audio recording you have chosen to experiment with.**
2. **Visit Taylor's website to hear excerpts from her album *Absolute Bird*: www.hollistaylor.com/compositions.html. These will form models for you to build your ideas upon.**
3. **Open your preferred notation software, and create a project for eitheßr a flute and vibraphone or b flute and piano. Flute will obviously be used for the birdsong; however, you can swap the roles at any time.**
4. **Notate your selection of birdsong into the flute part and repeat it as many times as you feel necessary (leave space between each repetition).**
5. **Using the notes of the birdsong, create a series of echoes, slightly altered each time in the second instrument. Use rests and don't be afraid to repeat small sections or phrases. Your goal is to create a *conversation* between the two instrument layers.**

Hint

Repetition is, again, your friend to copy and paste!

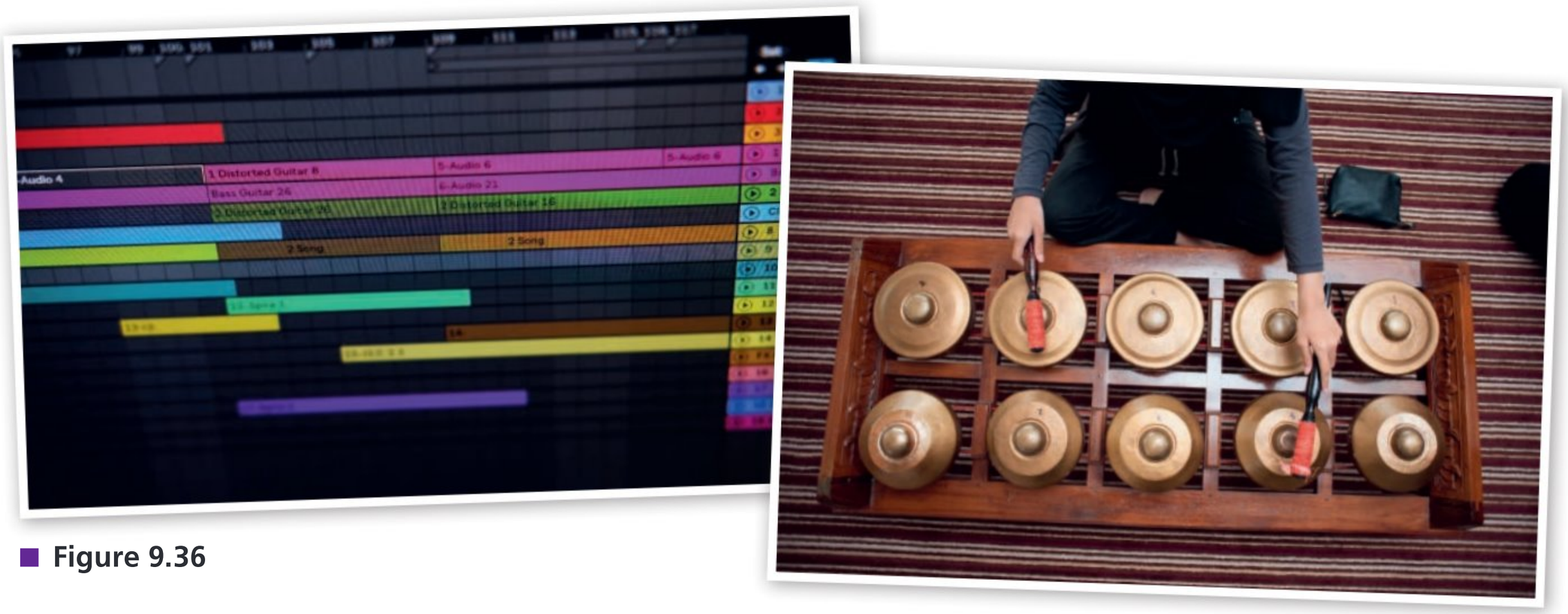
6. **Finally, like Peter Sculthorpe, think about ways of notating patterns in the piano or vibraphone that would *make it sound like a bird*. Brainstorm with a friend and create your own musical symbols for performers to interpret.**

Document all of your work in your portfolio and ask for peer feedback. Being able to **evaluate** your work is a crucial step in refining and **developing** your process.

Assessment opportunities

In this activity you have practised skills that are assessed using Criterion C: Thinking creatively and Criterion D: Responding.

How has technology connected traditional and contemporary cultures?



■ **Figure 9.36**

TECHNOLOGY AS A CONNECTION FOR THE FUTURE

Ancient and traditional cultures may not have had computers and DJ equipment, but they innovated and performed music that was pivotal to their way of life. Within the modern world, we tend to save our own playlists and stick to the type of music we most enjoy. But what if the technology we use to consume music could also become the technology we use to connect with traditional and contemporary cultures for new ideas?

The traditional Gamelan ensembles of Java and Bali have a unique tonal quality that creates an almost hypnotic effect through the layering of different melodic and rhythmic patterns. Typically, entire ensembles are set into two tuning systems, *slendro* (a 5-note **scale**) and *pelog* (a 7-note scale), with a collection of gongs like the **aerophone** *suling* and **chordophone** *rebab*. Translating these sound sources into electronica is something that Jakarta-based trio Uwalmassa can now do live! Visit **www.ableton.com/en/blog/uwalmassa-gamelan-deconstructed** to hear what they call '… a dialogue between natural, synthesised, and heavily processed sounds'.



■ **Figure 9.37** Visit Uwalmassa's article at www.ableton.com/en/blog/uwalmassa-gamelan-deconstructed/



■ **Figure 9.38** Visit www.songlines.co.uk/news/david-attenborough-my-field-recordings-from-across-the-planet-out-november-23 to see how his field recordings were made.

Sir David Attenborough is known for his tireless efforts in documenting the flora and fauna of planet Earth, most notably with the BBC series *Our Planet*, *Blue Planet*, and more. Attenborough also made audio recordings, taking the time between filming to document special cultural performances. The idea that we can record a concert is not new, but what if the music being recorded had not been heard before? What inspiration could that provide an artist or musician?

> *"While I was theoretically looking for pythons, in the evenings I would record different types of music…"*
>
> *Sir David Attenborough*

I USED TO THINK… BUT NOW I THINK…

David Attenborough's 'My field recordings from across the planet' can be heard on the playlist with titles 'Gender Wayang' and 'Gamelan Orchestra'.

This raises further questions in defining the boundaries between new and traditional, and just how blurred the lines can become before something is lost. Take a moment to reflect on technology's role in recording music by **using** the following prompts:

1. **I used to think traditional music and technology were…**
2. **But now I think, as a result of what we've been studying and / or discussing, …**

Write down your answers, and a friend's, in your portfolio before beginning the next activity.

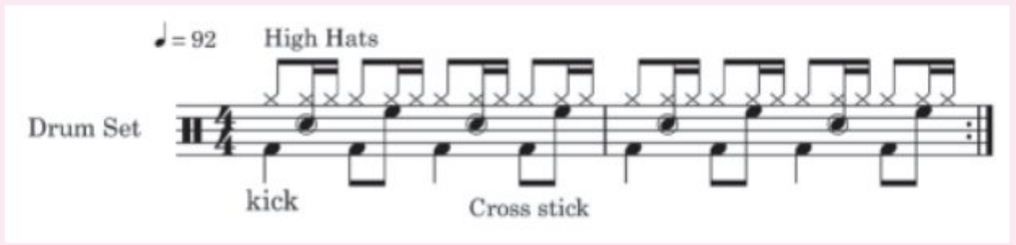
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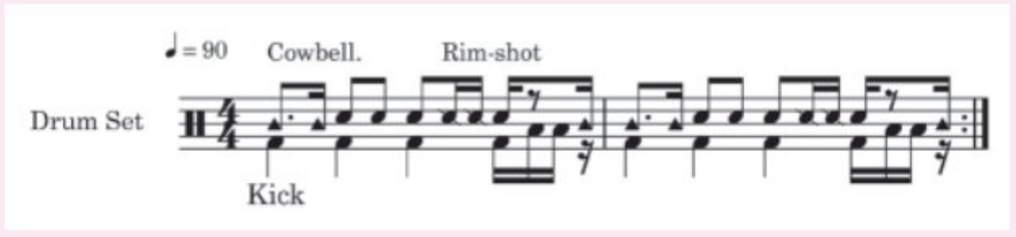
Ensemble performance: 'Tight Squeeze' (2013)

According to the composer Alex Schapiro (b. 1962), blending electronic music with other genres is an incredible way to cross musical boundaries. By combining elements of techno, jazz, Latin and 12-tone serial music, Schapiro is able to **create** a performance for ensemble that evolved from improvisation and experimentation. You can watch Schapiro's explanation of her creative process here: **https://youtu.be/HT_JPbJyjes**

Music exploration: Syncopated and dotted rhythms

Rhythm is a creative tool that you can use to combine different patterns from around the world. Everything in rhythm stems from identifying which patterns align well together, making them complementary. For example, in Columbia there is a rhythm known as *cumbia*, and from the Dominican Republic there is a rhythm called *merengue*. Both use subdivision in different ways and to create unique performance patterns (see **https://youtu.be/JrD6XmYnl2o**).





■ **Figure 9.39** Cumbia and merengue patterns notated with variation for drum kit

To perform the rhythms above, start slow, count each 16th note (or semi-quaver) as 1e&a, 2e&a, 3e&a, 4e&a. This will give you an understanding of the rhythmic example: 'Goals on Drums' (Jonny König): **www.soundslice.com/slices/Ntdcc**

Don't forget to add examples of patterns from this video to your portfolio.

ACTIVITY: Amphibians

ATL

- Collaboration skills: Encouraging others to contribute

After first getting involved in electronic music in 1958, Morton Subotnick (b. 1933) claims that his approach would be the same if he was sculpting with stone or clay. Within the album *Music for the Double Life of Amphibians*, the electronic components blend with the ensemble, **complementing** the acoustic layers and forming a complete tonal landscape. Listen to the tracks 'Angels, a Fluttering of Wings: 3. Halo' on the playlist.

Music for The Double Life of Amphibians is an album that suggests a metaphor of

> *"… the 'doubleness' of the amphibians, needing [their] past–present environment (the water) while reaching for a new present–future world (the air), is our '*doubleness*' – the past–present and present–future – that beast–spirit and angel–spirit in us all."*
>
> *Subotnick*

As a class, watch Subotnick's own explanation of his creative process here: **www.bbc.com/news/magazine-35607200** and then split into small groups to complete the following activity.



Figure 9.40 A music technology setup today can include an interface with almost every sound built into the computer

Creating an electro-acoustic performance

1. **Choose an amphibian, such as the frog pictured below, then brainstorm what types of sounds you think could fit with this creature under or above water.**
2. ***Draw a road-map of sounds*, using symbols and colour, that follow an *arch form*. This is where you start with one musical idea, it develops in the middle of a piece and then returns to the original idea at the end. Use 'Angels, a Fluttering of Wings: 3. Halo' as your model.**
3. **In small groups, experiment with instruments, voice, devices or SoundTrap to create individual ideas that match your road-map of sounds.**
4. **Spend time together performing your 'sound piece'. Make sure you record each practice session and choose the best recording that matches your road-map of sound.**

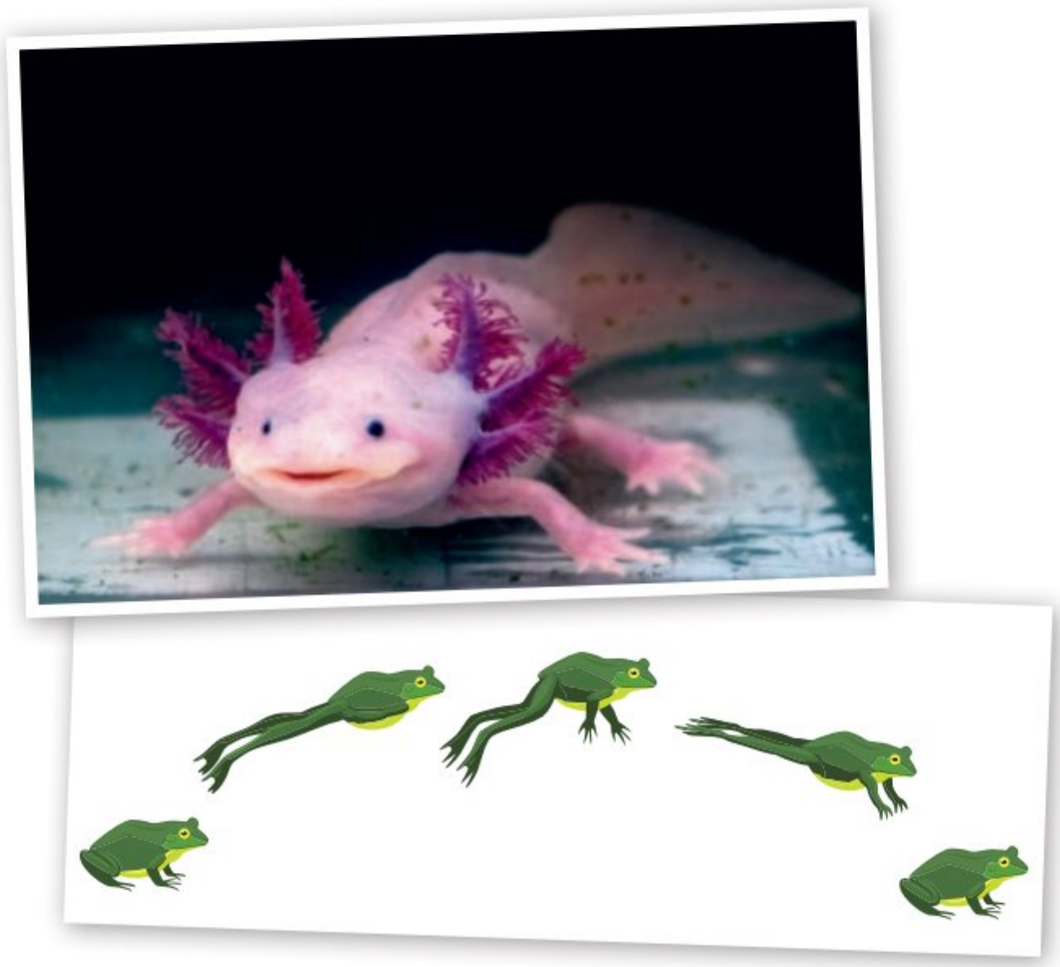


Figure 9.41 A frog (or fronds on an axolotl) demonstrate *arch form*
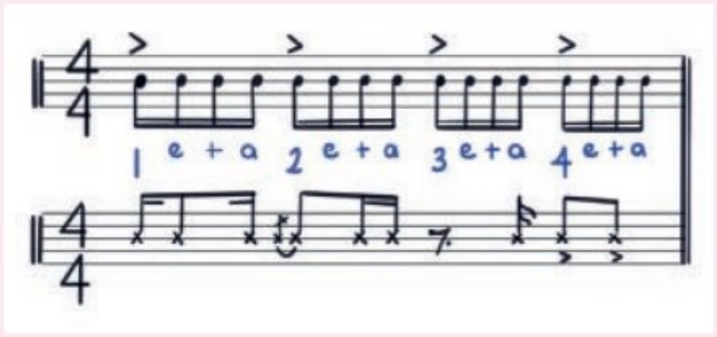
Assessment opportunities

In this activity you have practised skills that are assessed using Criterion C: Thinking creatively and Criterion D: Responding.

How are concepts such as rhythm and pitch able to cross boundaries?

Music exploration: Subdividing rhythms
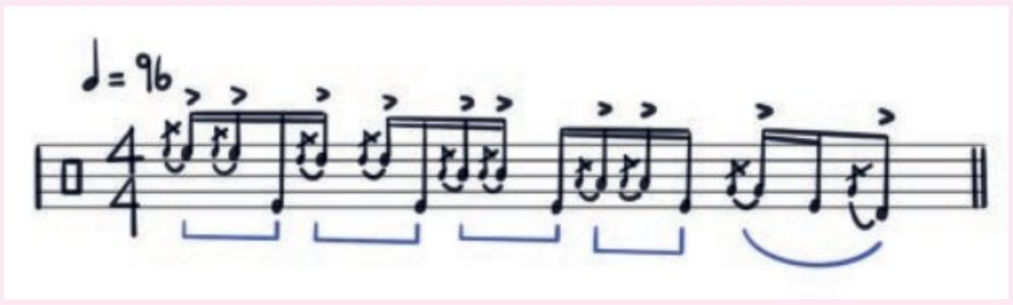
Rhythm is a creative tool that you can use to combine different genres of music and even layer ideas on top of each other. Everything in rhythm stems from the technique of **subdivision**; identifying which patterns align well together; making them complementary. From African drumming to the rap of Alexander Hamilton, patterns of semi-quavers (16ths) are a great place to start.



■ **Figure 9.42** 16th-note patterns layered in various subdivisions, with ghost notes (or *acciaccaturas*)

To perform the rhythms above, start slow and count each 16th note or semi-quaver as 1e&a, 2e&a, 3e&a, 4e&a. This will give you an understanding of our first big rhythmic example: 'In The Air Tonight' drum solo (Phil Collins): **www.soundslice.com/slices/-mTcc**

Notice that while there are many **acciaccaturas** (that result in the sticks creating what is called a *flam*), there is a repeated rhythmic motif that unifies the entire phrase.



■ **Figure 9.43** Unifying grouping marked in blue

When you create something in the final assessment, remember this example of using a small rhythmic pattern to unify your work.

WHY ARE RHYTHM AND PITCH SO POWERFUL?

MEET THE COMPOSER: ELLA MACENS

Ella Macens (b. 1991) is a composer whose works have begun to capture the imaginations of new listeners. Her ideas come to life in choral, chamber, electro-acoustic and orchestral media.

As the winner of the 2017 Young Composer Award, organised by Willoughby Symphony Orchestra (WSO) in Australia, you can listen to Macens' first orchestral work *Flight* (2016) on Soundcloud here: **https://soundcloud.com/ella-macens/flight-for-symphony-orchestra**

> *"As the music unfolded, my mind became hooked on visualising the act of flying, in all its forms: – soaring, diving, gliding, spinning, hovering, rising, falling. I imagined birds flying in our skies, diving in and out of lakes and forests and soaring high over mountain peaks. I pondered how much of this world they have seen, and what the world's communities look like from above."*
>
> *Ella Macens*
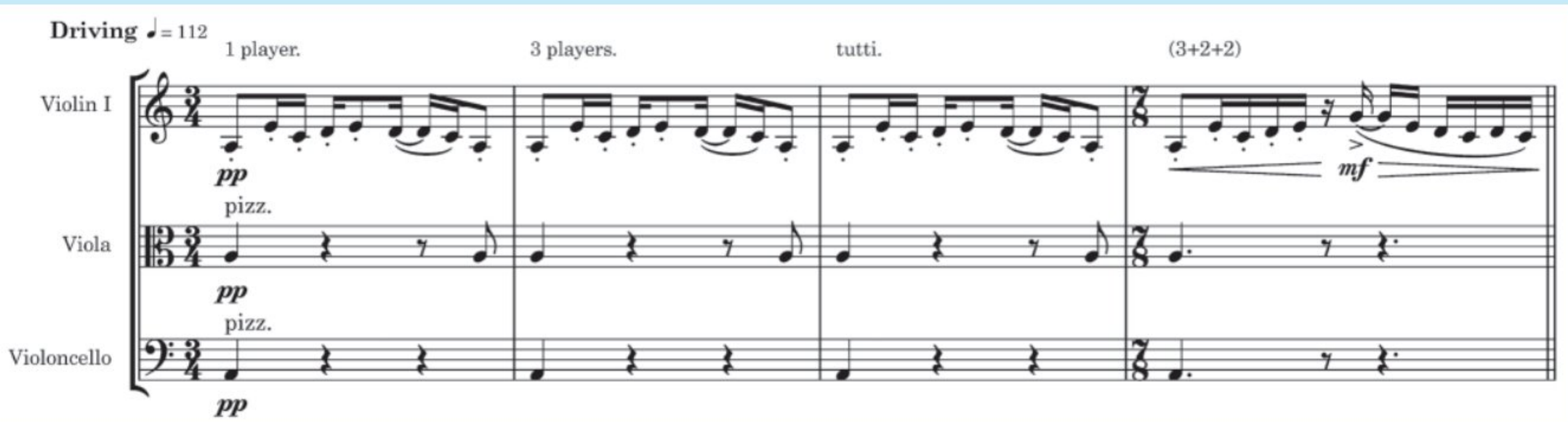
The main melodic idea is presented opposite, as introduced by the strings.

The rhythm is established throughout the 6 minute work in various repetitions passed around sections of the orchestra. Macens uses the melodic motif's pattern continuously. However, she also breaks it up for a rising motif that can be heard as a distinctly different theme.

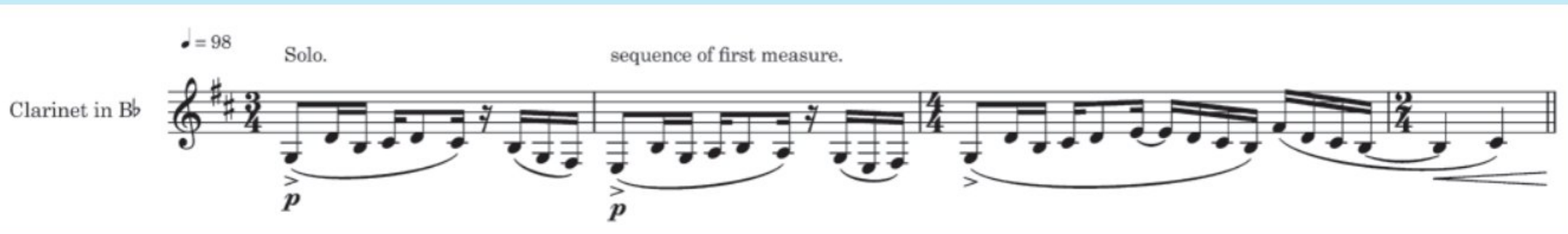
With each example provided you can see how repeated melodic and rhythmic ideas add *unity* to a work. The subtle variation and passing of the themes to different instruments provides *balance*. Copy these examples into your portfolio and try to develop your own motifs similar to Macens'. You could sketch out a few ideas yourself and play them on your instrument; whether that is a violin, clarinet, guitar or device!
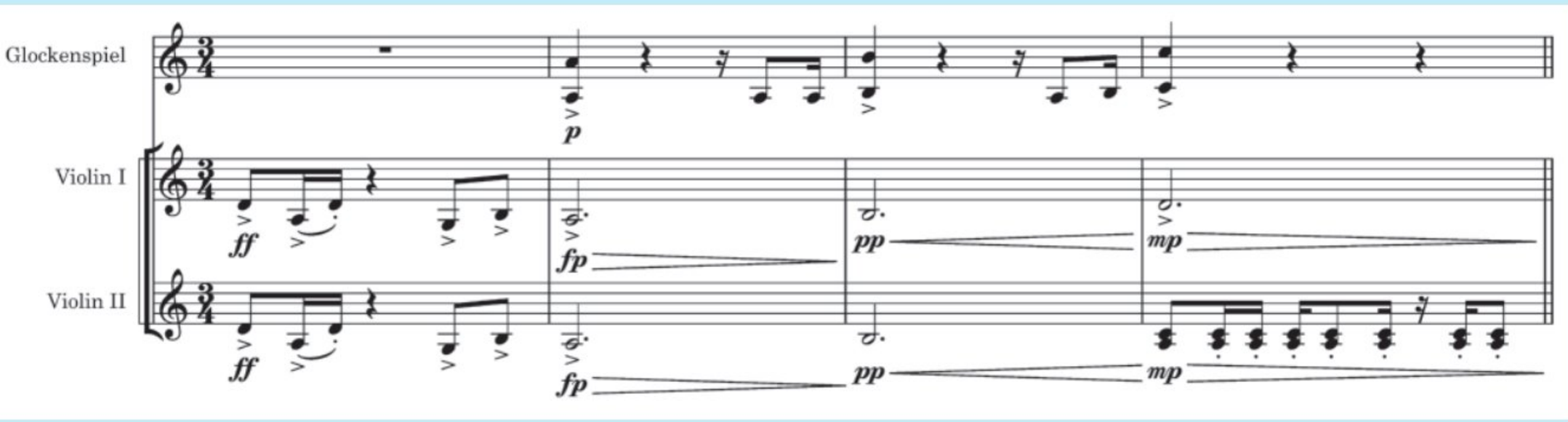


■ **Figure 9.44**
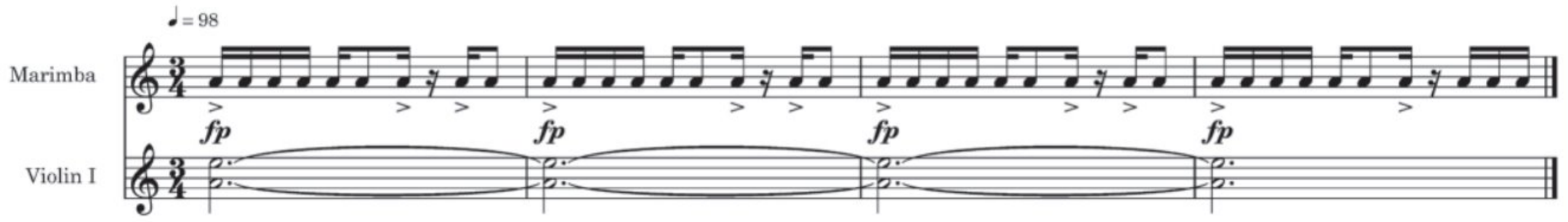


■ **Figure 9.45** 'Flight' melodic motif in strings mm17–20



■ **Figure 9.46** 'Flight' rhythmic motif in clarinet with ending variation



■ **Figure 9.47** 'Flight' rising theme plus a fragmented version in the glockenspiel mm71–74. Remember *motivic development*?



■ **Figure 9.48** 'Flight' rhythmic motif used to reinforce thematic material

ACTIVITY: *Black Angels*

ATL

- Creative thinking skills: Focusing on the process of creating by imitating the work of others

The work we will investigate here is called *Black Angels* by George Crumb (b. 1929), scored for electric string quartet. Written at the time of the Vietnam war, you can listen and watch the score on YouTube here:
https://youtu.be/etHtCVeU4-I

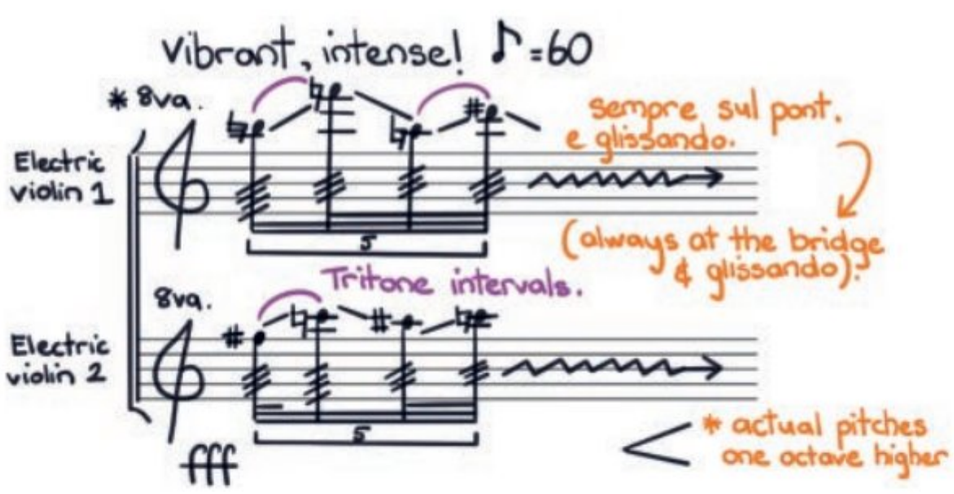


Figure 9.49 *Black Angels'* opening tremolo strings and their tritone intervals

In the example above, Crumb **outlines** two pairs of tritones (the devil-in-music, or a flattened 5th interval), to reinforce the symbolism of the *black angel*.

In the movement entitled 'Devil Music', the tritone interval returns among several string techniques of harmonics, **glissandi** and deliberate pressure on the bow to bring out a scratching noise from the violin. Add to this the ancient chant of the dead, the *Dies Irae*, and Crumb's image of a work *in tempore belli* (during a time of war) is complete.

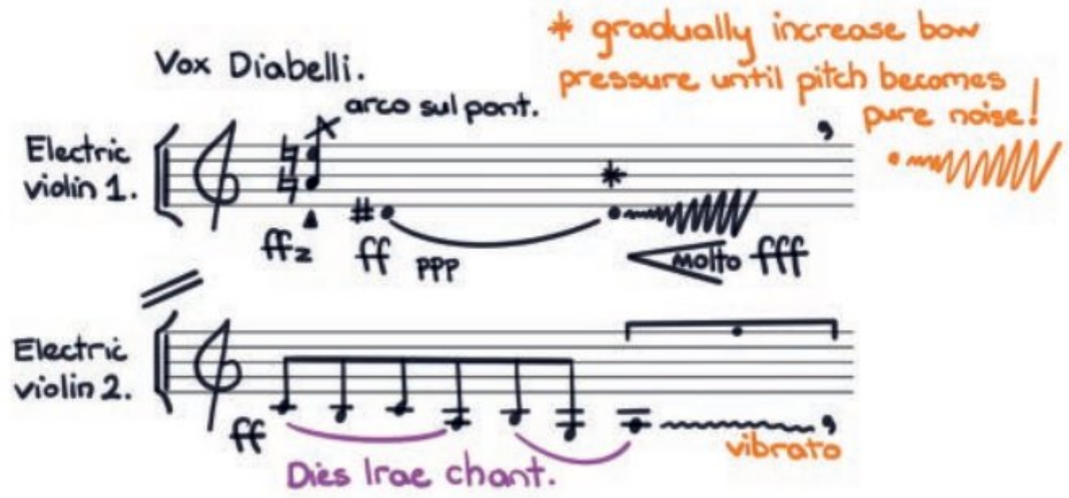


Figure 9.50 Black Angels' 'Devil Music'

In your portfolio, **create** a series of rhythmic patterns for guitar, marimba or violin (covering different tone-colours). You can **use** ideas from Ella Macens' 'Flight' or parts of *Black Angels* (you will want to turn them into a series of repeated phrases):

1. **Start by writing or clapping a 2-measure rhythmic motif.**
2. **Now create a series of rhythms that relate to the first by chopping it into smaller segments.**
3. **Lastly, building on Crumb's idea of the evil of war, use the notes of the *Dies Irae* and attach them to your rhythmic phrases. As you can see in the example given, a violin was chosen to repeat the opening tritone interval like Crumb did in 'Devil Music'.**

If you can ask a performer to workshop your phrases, reflect on how effectively they communicate what you intended.

Assessment opportunities

In this activity you have practised skills that are assessed using Criterion A: Knowing and understanding and Criterion C: Thinking creatively.
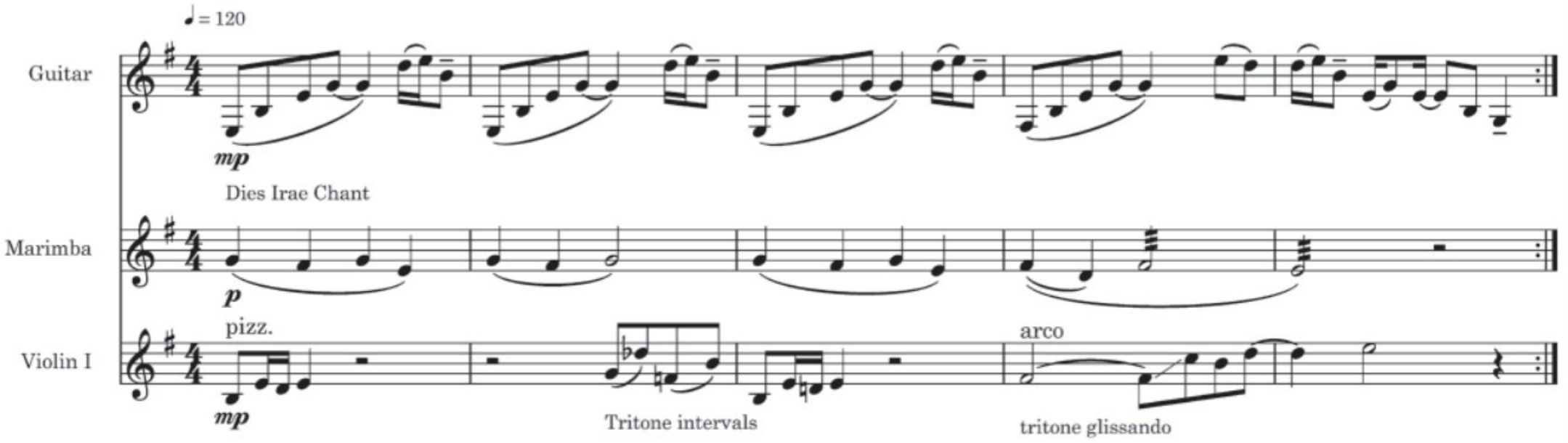


Figure 9.51 Composed examples of rhythmic motifs with the *dies irae* attached, plus string techniques.

Is incorporating another culture's music into your own ethical or appropriate?

THINK–PUZZLE–EXPLORE

This thinking activity begins with a reflection on the life of musical composer and adventurer David Fanshawe (1942–2010). Anecdotally, Fanshawe failed his music theory test upon entry to the Royal College of Music (London), and even apologised for wasting the examiners' time! But what Fanshawe accomplished in the years to follow set the stage for sharing other cultures' music with the modern era. Fanshawe introduced sampling and live backing tracks, the potential of fusing genres and scoring Western music alongside traditional African.



■ **Figure 9.52** Portable field tape recorder and Fanshawe in Africa

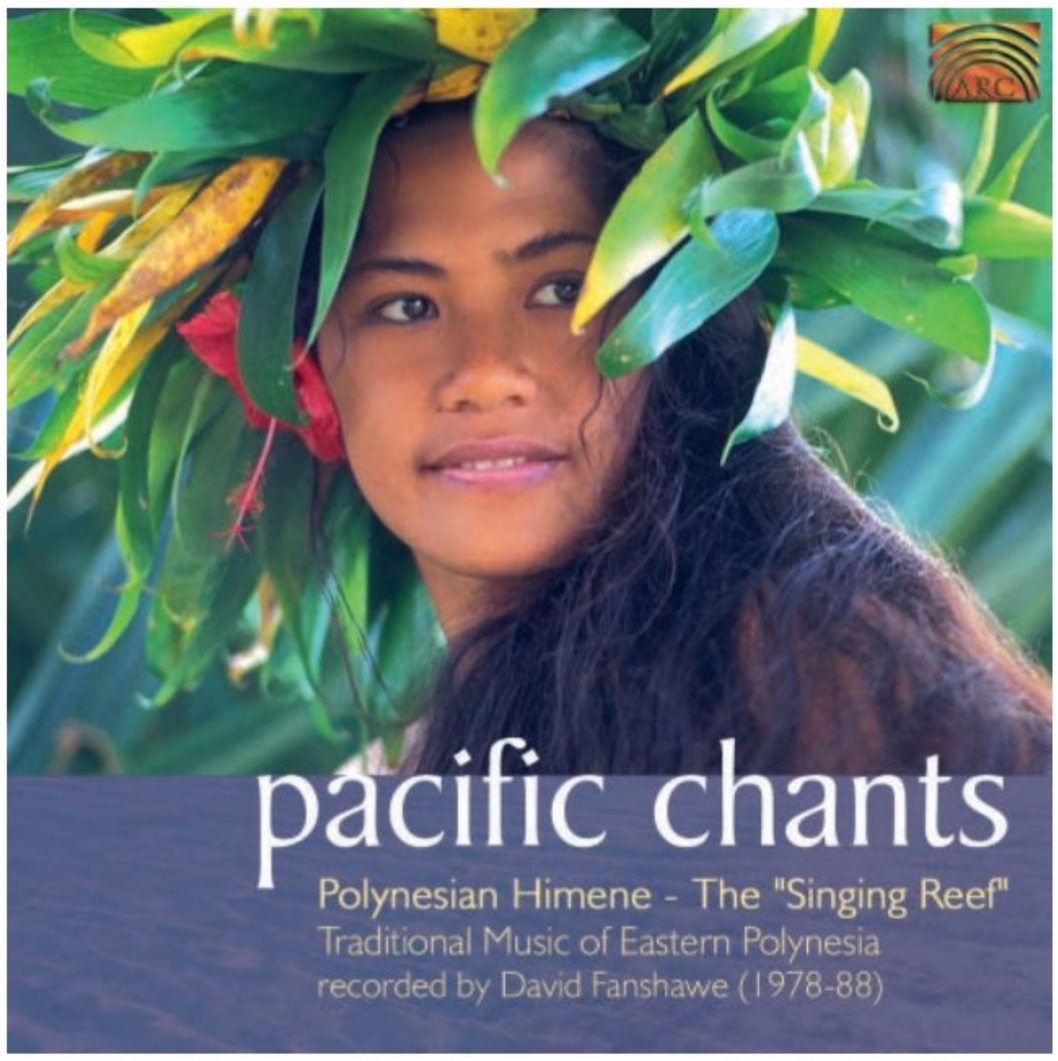
Armed with a portable tape recorder, much like Sir David Attenborough, Fanshawe travelled to Africa and began making countless recordings and journal transcriptions of the music he encountered. If you can, as a class watch the BBC documentary 'African Sanctus' (1975) featuring David Fanshawe (**www.fanshawe.com/video.html**).

Fanshawe himself reflected on the blurring boundaries of old and new back in 1970. He questioned what was happening to the heritage of African music because of Western influence. He summarises that this influence had contributed to the breakdown of tribal life. How could he, as a composer, fall in love with the colour and impact of African music, and then go home and write string quartets?

Fanshawe 'loved the world' and sought to build with the musical sounds he encountered. But in this modern age of global connectivity, have we lost what is original? Additionally, what does cultural appropriation mean in today's musical world?

As a class, reflect on the questions above and Fanshawe's comments in the documentary. **Use** the prompts below to write more detailed responses in your portfolio:

1. **What do you think you know about the topic of originality and appropriation?**
2. **What questions or puzzles do you have?**
3. **How can you explore this further?**



■ **Figure 9.53** *Pacific Chants* recorded by David Fanshawe

As a final listening activity, visit the playlist for Fanshawe's *Pacific Chants* album that he started recording in 1978. The track 'Imenetuki Oneroa' **demonstrates** a beautiful texture of voices singing in harmony with repeated melodic and rhythmic phrases. Include graphic notations of the main phrases in your portfolio.

ACTIVITY: Blending styles

ATL

- Communication skills: Collaborating with peers and experts using a variety of digital environments and media

In this activity, you will **create** your own blend of styles, with performance directions, using a Latin rhythm called the *malambo* as your foundation pattern. But first, we need to listen to two works by Argentinian composer Alberto Evaristo Ginastera (1916–1983).

- **Work 1: Malambo from *Estancia* (1941)** (https://youtu.be/TIIrW4a1Vdg)
- **Work 2: Malambo for Piano, Op. 7, (1940)** (https://youtu.be/o9oWO4rapGE)

Inspired by the cowboys of Argentina, the *gaucho*, and their way of playing the guitar, Ginastera would often include guitar tuning in his harmonies.

Your turn

Using the rhythmic examples provided, we will create a fusion malambo piece in 6/8 for guitar.

1. **Choose two of the rhythms from Figure 9.54. Notate them into your chosen software program and start your piece with the open strings of the guitar like 'Malambo for Piano' did (you will need 4 to 8 measures).**
2. **Using the notes of the open strings E, A, D, g, b and e, attach them to your chosen rhythmic patterns. You will want to keep the note 'E' as your main downbeat.**
3. **Experiment playing these five notes in different combinations until you come up with a melody. You can use other notes in between these five, to make it sound less 'pentatonic'.**

As a last element, add a 1-measure rhythmic **ostinato** in 6/8 to play alongside your guitar melody. Share your work with a friend and take turns playing the rhythm over each other's melodies. Do they **lock in** together? Do you have to make any further adjustments? Keep a record in your portfolio of any edits you make, as well as the final work.

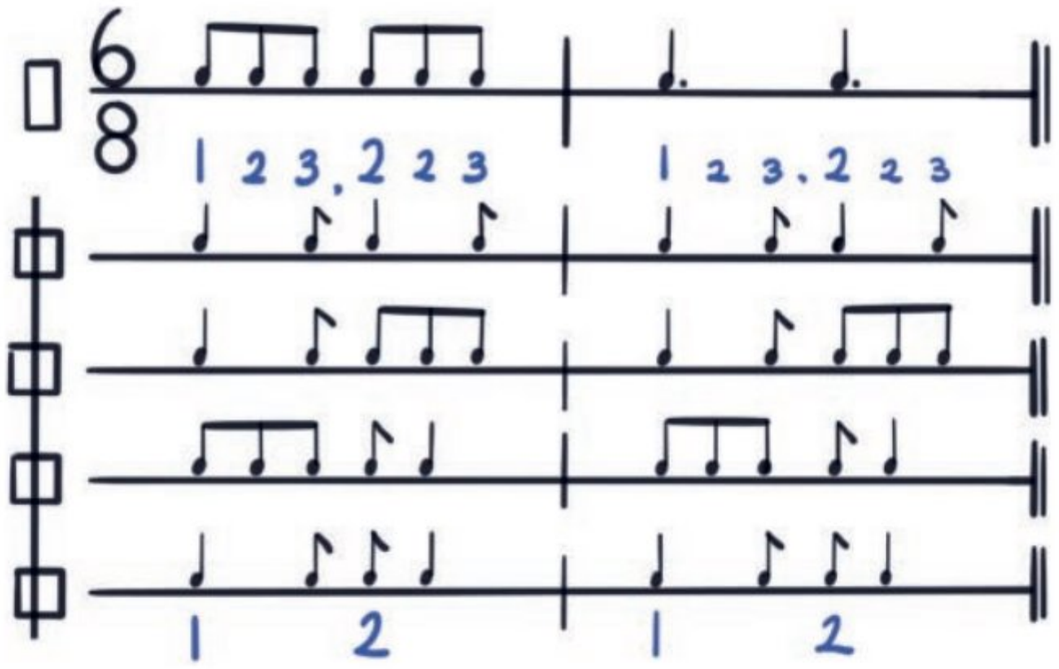


Figure 9.54 Malambo rhythms

Assessment opportunities

In this activity you have practised skills that are assessed using Criterion B: Developing skills and Criterion D: Responding.
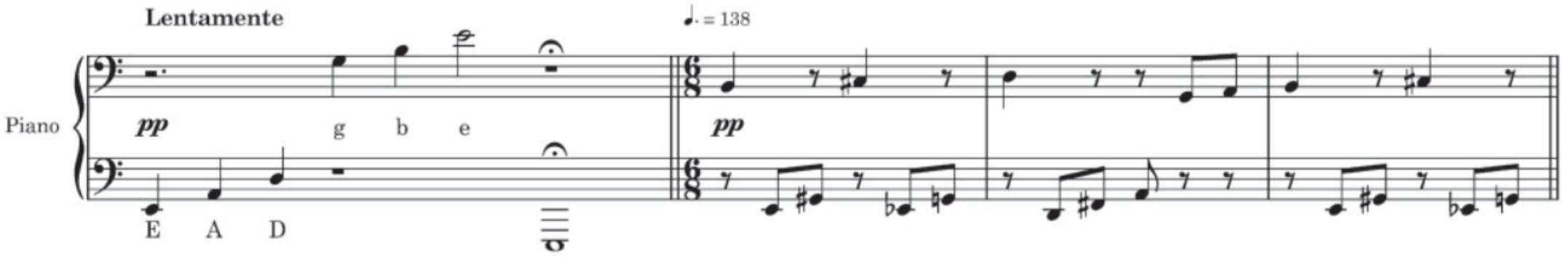


Figure 9.55 'Malambo for Piano' begins with the open 4th intervals like a guitar
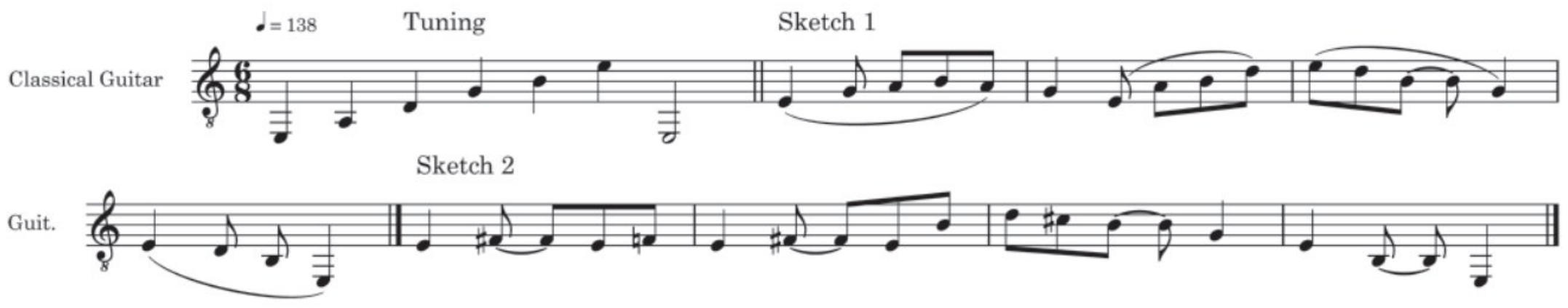


Figure 9.56 Composed Malambo examples for guitar

Can world, or global music redefine boundaries, genres and styles?



■ **Figure 9.57**



■ **Figure 9.58**



■ **Figure 9.59**

THE UNIVERSAL NATURE OF MUSIC

Musical traditions, particularly their rhythms and melodies, can be extremely resilient. Some cultures find new ways of connecting their music to their shared histories, in powerfully significant ways. They build an ensemble where everyone performs together, partaking in the same story. In Bali, for example, there is a tradition of storytelling that results in a combined tonal soundscape, not that dissimilar from the ringing Gamelan metallophones.



■ **Figure 9.60** The Ramakien (Ramayana) mural paintings along the galleries of the Temple of the Emerald Buddha, Bangkok Thailand.

Not many institutions have their own set of Gamelan, but you can perform an amazing piece just using body percussion! In Balinese Gamelan, there is a particular work called the *Kecak* that describes a scene from the epic poem of *Ramayana*. Much like an *ekphrastic* response, musicians retell the part where a princess is rescued by the hero Rama and an army of monkeys. The work is usually performed by a chorus of men chanting an onomatopoeic syllable 'chak', intended to sound just like the army of monkeys. The *combined effect* is hypnotic and powerful. You can interact with the epic poem and its manuscript here: **www.bl.uk/collection-items/ramayana**. Then as a class, watch the live performance of this chant on YouTube from the 1993 film Baraka at **https://youtu.be/2WHx2ITKtUg?t=105**

ACTIVITY: Gamelan to Stevie Wonder

ATL

- Creative thinking skills: Practising visible thinking strategies and techniques

Let us perform the *Kecak* chant!

1 a **Using a grid of 16th notes (semi-quavers), organise yourselves as a class so that everyone takes a line (reading left to right).**

b **You will need a timekeeper to outline the pulse with a hand drum (or *kendhang*) and a song-leader who calls out 'chak', signalling when to start chanting the syllable 'chak' to the pulse.**

c **Lastly, you will need two people to use their voices as gongs to mark out the main beats below. They chant the onomatopoeic word 'pung' when they see the marking of '0'.**

BPM 120	Ta	Ka	De	Mi	Ta	Ka	De	Mi	Ta	Ka	De	Mi	Ta	Ka	De	Mi
Gong 1	0				0				0				0			
Gong 2					0								0			
Chak 1	x		x	x		x	x		x		x	x		x	x	
Chak 2		x		x	x		x		x	x		x		x	x	
Chak 3		x	x		x	x		x	x		x	x		x	x	
Chak 4	x			x		x	x		x		x	x		x		x

Note that the grid is an approximation and not intended as an authentic transcription.

Extension

Listen to the track 'Don't You Worry 'Bout a Thing' from Stevie Wonder's 1973 album *Innervisions*, and **identify** how the work **uses** the same idea of *interlocking rhythms* as the example above.

Listen as each instrument is introduced and make notes of when you hear the layers change. Organised into a grid of 4/4, 'Don't You Worry' introduces pattern after pattern in the rhythmic grid with each repetition.

2 a **Draw up a table like the one below, showing two measures of 4/4 in 16th notes (or semi-quavers).**

b **Add in each layer as you identify it, with clear labels of shaker, cowbell, and so on.**

c **See how many layers you can add to your portfolio, starting from the three given below.**

1	e	+	a	**2**	e	+	a	**3**	e	+	a	**4**	e	+	a	**1**	e	+	a	**2**	e	+	a	**3**	e	+	a	**4**	e	+	a
Piano starts with a Latin montuno-style piano part (numbers above are 16th notes)																															
x				x		x				x				x				x				x				x		x			
A woodblock and shaker enter outlining beats 1+2+3+4+																															
x		x		x		x		x		x		x		x		x		x		x		x		x		x		x			
A guiro enters playing a typical scraping rhythm																															
x				x		x		x				x		x		x				x		x				x		x			

Assessment opportunities

In this activity you have practised skills that are assessed using Criterion B: Developing skills and Criterion D: Responding.

Portfolio presentation

Mugungwha Train

In 2017, composer Brendan Collins was commissioned to create a work for a concert band as part of a school festival in South Korea. Based on the Korean *mugungwha* train, the themes refer to scenes of both metropolitan and rural areas as one would travel on the train. Collins also integrated traditional Korean instruments such as the *kwengari* (small hand-held gong) and *janggu* (double-headed drum). His choice of a 5/4 **time signature** allowed a steady pulse of 8th notes (quavers) to support a **syncopated** melody on top.

You can watch the violin version performed on Vimeo here: **https://youtu.be/X6PW3ovqVWY**

1 Your role will be to explore the idea of writing a melody over a rhythm in 5/4.

2 Using the MuseScore example below, improvise your own melody in C minor using **sequences**.

3 You could have MuseScore play back the 5/4 rhythm while you improvise a theme on your own instrument or device.

Use your portfolio as a means of documenting your sketches and how you approached working with an odd time signature of 5.

Assessment opportunities

In this activity you have practised skills that are assessed using Criterion B: Developing skills and Criterion C: Thinking creatively.
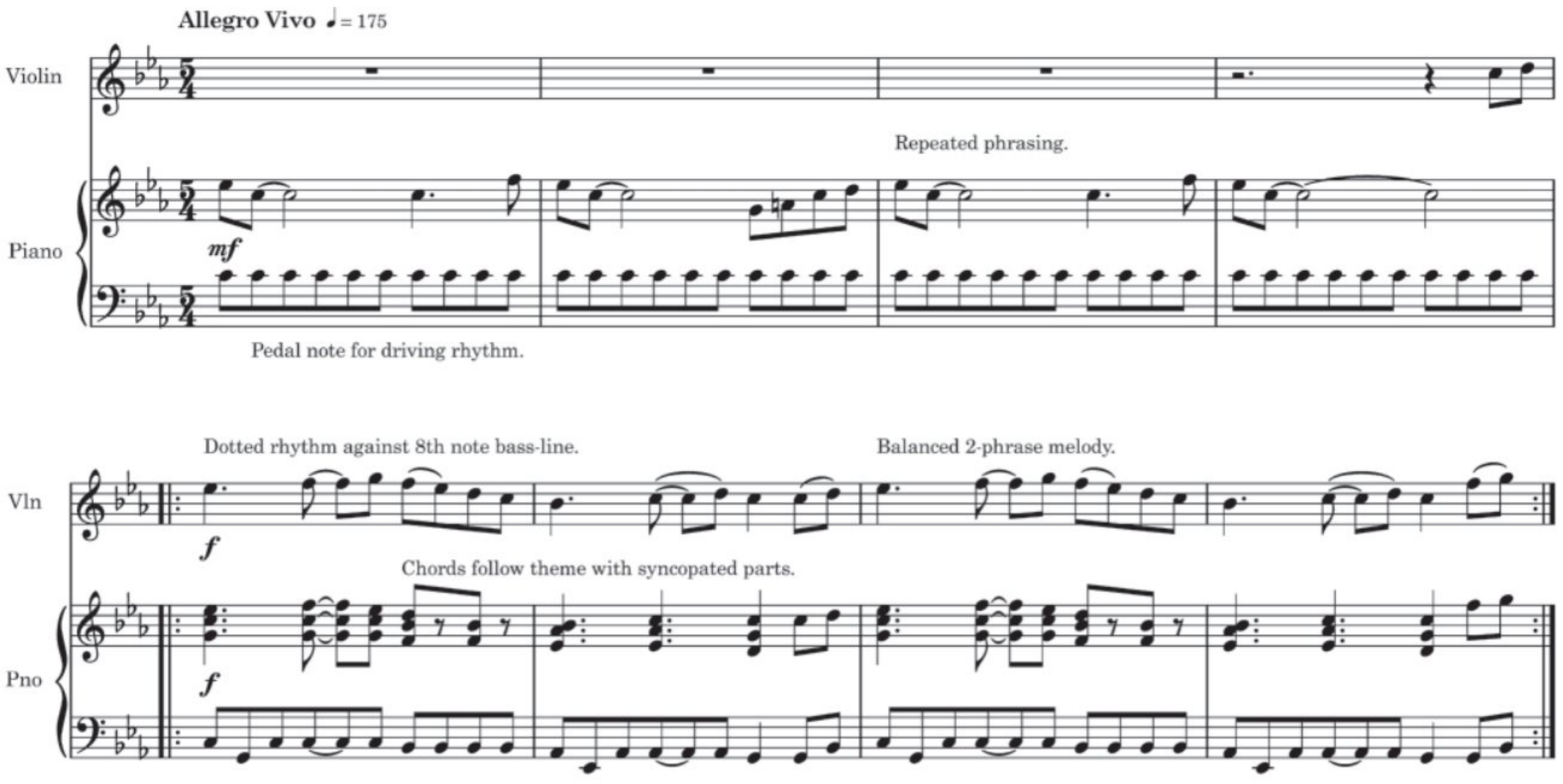


Figure 9.61 *Mugungwha Train* for violin and piano, with 4-phrase melody
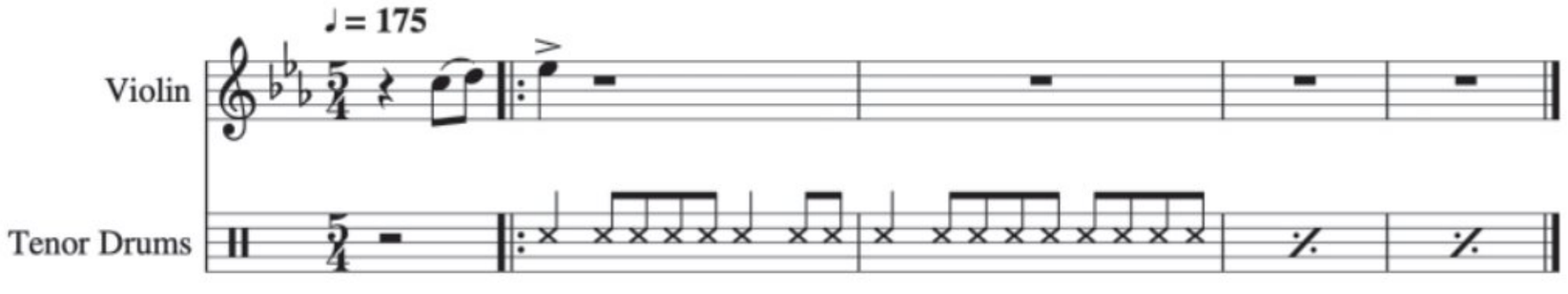


Figure 9.62 *Mugungwha Train* example MuseScore file

How do musicians innovate with both technical and traditional cultures?



■ **Figure 9.63**

Reflection

In this chapter we have **explored** an incredible amount of music from different continents and composers, as well as the graphic symbols used to **describe** and **explain** specific performance or sound-making directions. Through **comparing** and **contrasting** electronic and acoustic works, a connection can be **identified** through their use of similar musical building blocks, and their expressive qualities. By **outlining** certain *technical* (that is, notes, rhythms, scales, technology) and *cultural* boundaries (songs, chants, patterns, ceremonies, stories) in music, we now have two avenues for further *discussion and experimentation*.

Everything can potentially become an *ekphrastic* response. However, when music is deconstructed and *investigated*, rhythmic, melodic or basic structural boundaries become very helpful for identifying styles and **developing** our own individual voice.

SOME SUMMATIVE OPTIONS TO TRY

Use these ideas to apply and extend your learning from this chapter. These problems can be assessed using any of the suggested strands above the summative activities. . The presentation and portfolio requirements are given after the description.

THIS TASK CAN BE USED TO EVALUATE YOUR LEARNING IN CRITERION A AND CRITERION D (ALL STRANDS).

SUMMATIVE 1

From the rhythms of the Americas, to the melodies and harmonies of the Pacific to the Maqam of the Middle East, crossing physical boundaries can lead to you understanding global musical identities in our digital age. Within these identities are captured many musical colours, lines and shapes than can be repeated, drawn or layered. Your task will be to **present**, in the form of a speech given by a musical reporter, how you have discovered a rhythm, song or maqam from another culture.

Presentation and portfolio

Your portfolio will need to include sketches of rhythms, melodies and patterns from your chosen culture. They can be in graphic or traditional notation; however, you will need to play or sing them as part of your presentation. The goal will be to bring awareness of the musical colours, lines and research that you have discovered and how you learned to play or create with them.

Investigation ideas could begin with:

a **Nile Project at http://nileproject.org**
b **Silkroad Project at www.silkroad.org**
c **Smithonsonian Folkways at https://folkways.si.edu/learn**
d **Kitka Women's Ensemble at www.kitka.org**
e **Bali and Java at www.wisemusicclassical.com/news/3171/The-Influence-of-Bali-and-Java**

THIS TASK CAN BE USED TO EVALUATE YOUR LEARNING IN CRITERION B AND CRITERION C (ALL STRANDS).

SUMMATIVE 2

Building on the idea of graphic scores and electro-acoustic works, your task will be to compose a sequel work to Luther Adams' 'Become Ocean' (chamber or ensemble) or Einaudi's 'Elegy for the Arctic' (piano or guitar). Both seek to **identify** and combine musical textures to paint a picture of water.

Presentation and portfolio

Along with the quotation below, **present** your work as either a graphic score with recording, or a notated score with recording (**using** pencil and paper or software). Your music can take on an entirely new rhythm, pulse and tonality. However, make sure to include layered sounds as a part of the 'soundscape', and repetition as seen in Macens' 'Flight'.

> *"Life on this earth first emerged from the sea. Today, as the polar ice melts and sea level rises, we humans face the prospect that we may once again, quite literally, become ocean."*
>
> *John Luther Adams*

Portfolio presentation

Documenting and sharing

Keeping in line with all your activities, ideas and explorations, use the concepts discussed in this chapter to prepare your portfolio for the final three chapters. In Chapters 10, 11 and 12 there will be a focus on performing, creating and listening in more detail. This chapter presented ways in which you can evaluate, engage with and then interpret different musical approaches.

Use this table to reflect on your own learning in this chapter.

Questions we asked	Answers we found	Any further questions now?
Factual: What is a soundscape? What is graphic notation? What does ekphrasis mean?		
Conceptual: How can musical directions be innovative? How do musicians innovate with both technical and traditional cultures? How has technology connected traditional and contemporary cultures? How are concepts such as rhythm and pitch able to cross boundaries? In what ways are atmospheres painted with sound?		
Debatable: Is incorporating another culture's music into your own ethical or appropriate? Can world, or global, music redefine boundaries, genres and styles? To what extent can nature be identified as an innovative sound source?		

Approaches to learning you used in this chapter:	Description – what new skills did you learn?	How well did you master the skills?			
		Novice	Learner	Practitioner	Expert
Communication skills					
Collaboration skills					
Organisation skills					
Reflection skills					
Creative thinking skills					

Learner profile attribute	Reflect on the importance of reflection for our learning in this chapter.
Reflective	

10 How can strings become psycho?



■ **Figure 10.1**

Identifying the **relationships** between emotion, colour and well-**structured** ideas leads to an imaginative approach to **composition**.

CONSIDER THESE QUESTIONS:

Factual: Who was Bernard Herrmann? What is musical texture? What is motivic development? What is idiomatic orchestration? What is harmonic colouring?

Conceptual: How do we recognise 'the imagination' in creative works? How is rhythm used to layer phrases and harmonic colours? How do composers restructure their work to identify with emotion(s)? How can a melody or rhythm be reinterpreted for storytelling?

Debatable: Are film scores the new 'art music'? Is the repetition of a leitmotif still poignant in film?

Now **share and compare** your thoughts and ideas with your partner, or with the whole class.

IN THIS CHAPTER, WE WILL…

- **Find out** how to identify, develop and build musical ideas that communicate emotion or structure a narrative.
- **Explore** the progression of compositional techniques and musical devices, from Western art music to contemporary film-scoring. We will also examine string quartets to see how they structure musical themes to integrate them into our own practice.
- **Take action** to build a portfolio of melodic writing and orchestration that will culminate in our own podcast series or original score.

These Approaches to Learning (ATL) skills will be useful…

- Communication skills
- Affective skills
- Media literacy skills
- Creative thinking skills
- Transfer skills

Assessment opportunities in this chapter:

The last three chapters of this book will particularly focus on the transfer of skills in completing Pre-Diploma-level work. Inquiry activities will continue to form the majority of your thinking routines, as well as a special selection of orchestration and score-reading tips. The emphasis will be on the creative process, collaborative group work and manipulating the building blocks of music.

Assessment opportunities in this chapter:

- Criterion A: Knowing and understanding
- Criterion B: Developing skills
- Criterion C: Thinking creatively
- Criterion D: Responding

We will reflect on this learner profile attribute…

- Communicators: We express ourselves confidently and creatively in more than one language and in many ways. We collaborate effectively, listening carefully to the perspectives of other individuals and groups.

Prior knowledge

This chapter works on the premise of including all levels of learners. You will find it useful to know:

- how to play and work with scales, modes, chords, bass lines, riffs and ostinatos; the next step will be how you compare and then contrast these to other works you may know
- how to play, identify and analyse rhythms aurally, from notation and in performance
- how to work collaboratively to express musical ideas with instruments and various forms of technology
- what working within an ensemble means for balance and intonation, but also communication and expression
- ways of analysing music using pitch, duration, texture, structure, tone-colour, dynamics and expressive techniques to document the fingerprints of a style or artist / composer
- how to approach experimenting and presenting musical ideas from analytical listening; this includes reading scores and annotating examples.

Examples, links and referenced materials will guide you further.

KEY WORDS

cue
mode
chord extension
motif
motivic development
ostinato
syncopation
layers
harmony
score
orchestration
string writing
polychord
subdivision
extended techniques
hemiola
phrase
complementary

Links to: Film Studies; Language and Literature

Using the elements of film as well as more advanced features from storyboarding to lighting and camera angles, you can discuss the storytelling process with regard to colour, line and themes. Likewise, in Language and Literature, from Gothic novels to poetry, you will be able to find connections with the way language is used not only to express ideas, but connect and form relationships. This can be accomplished through creative writing and identifying *idiomatic* writing techniques.

THINK–PAIR–SHARE

In film music, we tend to have themes, rhythms or patterns that drive the music along, tell a story or help us **identify** particular sections in the structure. This chapter will open with one of the most iconic moments in film scoring, the shower scene from Alfred Hitchcock's 1960 thriller *Psycho*, composed by Bernard Herrmann (1911–1975). (Refer to the listening activity in Chapter 3).

Hint

A cue represents a part of the music that is timed to begin and end at specific points during the film.

Listen to the track 'The Murder' on the playlist:
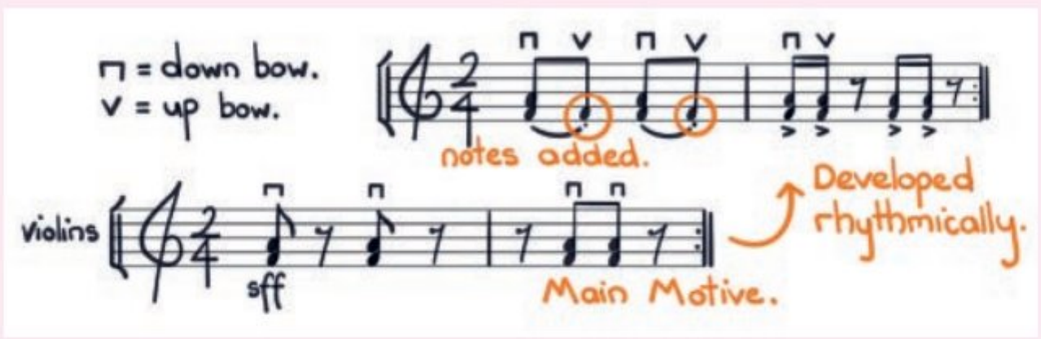
1. **In your portfolio, write a description of how the instruments are playing their cue.**
2. **Identify any structure and layer changes in the cue.**
3. **Turn to a friend or partner and discuss your findings, making sure to add any further details to your portfolio.**

This process of *listening*, *sharing* and *documenting* will become a crucial aspect of Chapters 10, 11 and 12.

Music exploration: Creating and colouring

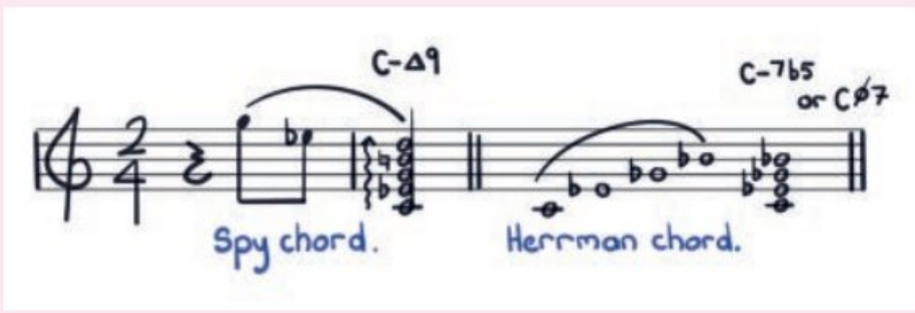
Known as the 'master of suspense', Bernard Herrmann's scores have become a defining example of what **motivic development**, harmonic colouring and **orchestration** have become in recent times. This chapter will set the stage by outlining three key phrases that will assist you throughout each activity.

1 **Motivic development**: A small musical idea is repeated, in various ways, while still retaining some element of its 'first self', for example the main theme or **motif** from the film *Psycho*:
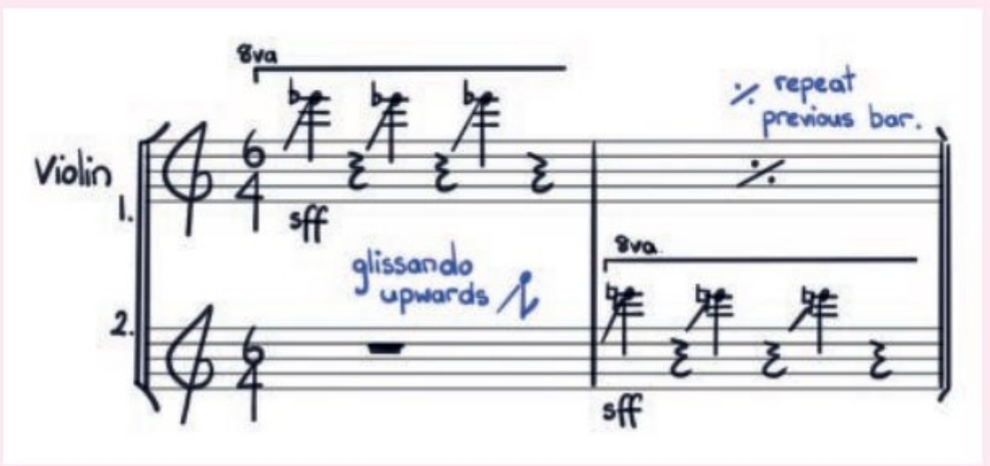


■ **Figure 10.2** *Psycho* opening strings motif with rhythmic development and interpolation (adding notes into the motif)

2 **Harmonic colouring**: A device where a composer uses **chords**, adds extra notes to chords and then listens to their individual sounds to create the effect they are after. For example the C minor–major 7 add 9 chord in spy films. Or the Bernard Herrmann C minor 7♭5 chord used in films such as *Vertigo* (1958), *North by North West* (1959) and *Psycho* (1960):



■ **Figure 10.3** CmΔadd9 plus the Cm7♭5 chords for harmonic colouring

3 **Orchestration**: The *decision process* that an orchestrator goes through in deciding which instruments should play which parts; in particular, focusing on the sounds they can produce with individual or grouped instruments – this can be seen in Herrmann's 'The Murder' scene from *Psycho*, where the upwards-sliding strings clearly depict a sharp knife, and the change to pizzicato strings with sustained bass make it very ominous and final:



■ **Figure 10.4** 'Stabbing strings' as glissandos; each voice shown is a minor 2nd interval apart

Portfolio presentation

Orchestration tips no. 1

The strings (including harp) are a formidable force in film scoring. Since Igor Stravinsky's *Rite of Spring* (1913), we can document how composers have used this instrumental group to depict romance, horror, action, fun and fantasy. The question to be answered throughout this chapter, however, is: How can we do it, as well?

Research activity

Using the internet, textbooks such as Samuel Adler's *The Study of Orchestration* (1982) and score excerpts, document in your portfolio five performance techniques for string instruments. You will need to make sure you include the notation and performance directions (for example, *arco* or *pizz*).

Who was Bernard Herrmann?



■ **Figure 10.5** Strings are an essential colour for composers. They can communicate messages, emotions – symbols even – that audiences identify with.

THINK–PUZZLE–EXPLORE

Writing film music for strings gives you (the composer and artistic director) immense freedom because of the wide variety of sounds these instruments can produce.

1 **What do you think you know about writing for stringed instruments? (Make some initial notes in your portfolio or conduct research.)**

Now listen to Hans Zimmer's track 'Zoosters Breakout' from the 2005 film *Madagascar*.

2 **What questions or puzzles do you have? Can you identify how the repeated ostinato pattern provides both the movement and harmony in this track? You should also notice that theme three is played smoothly over the top of the rhythmic ostinato.**

3 **How can you explore this topic of string-writing further?**

STRING-WRITING AS STORYTELLING

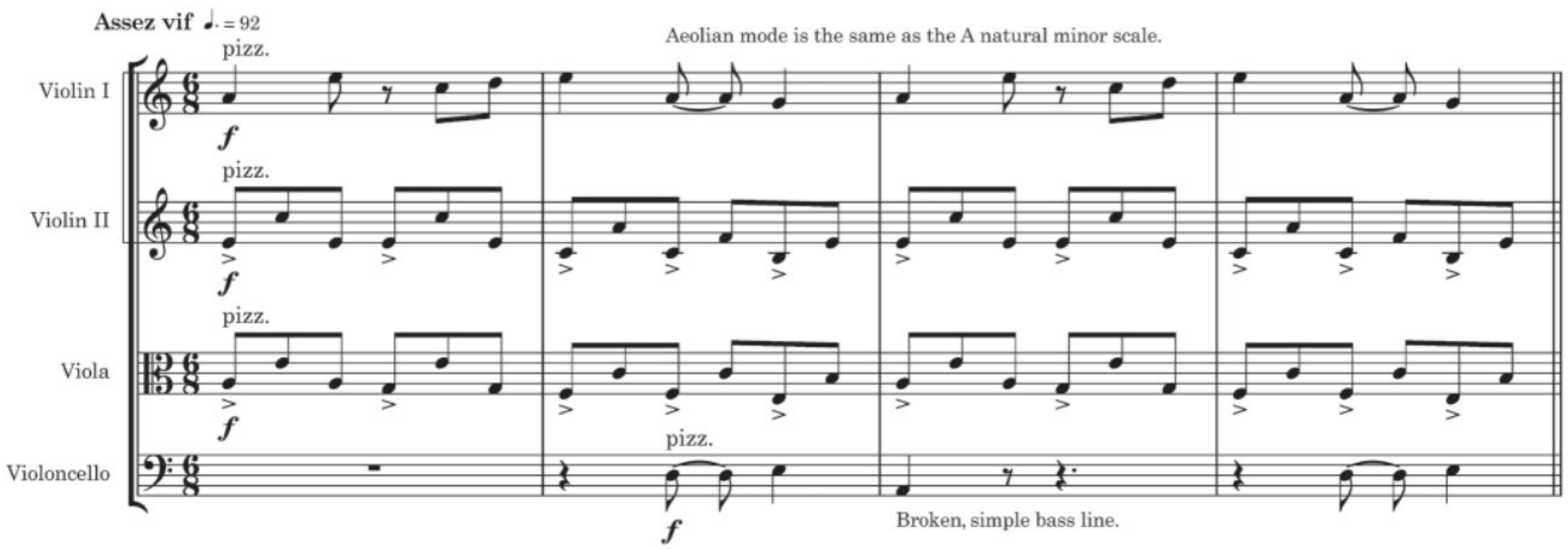
Portfolio presentation

Orchestration tips no. 2

The composer Maurice Ravel (1875–1937) wrote his 'String Quartet in F major' in 1903. The quartet's structure is modelled on that of Claude Debussy's 'String Quartet', written in 1893, but displays a sense of colour and melody that is all his own. Just note that all composers learn and build on the ideas of those they study.

Listen to the second **movement** 'Assez vif – très rythmé' on the playlist or YouTube with score at **https://youtu.be/ieRQyyPowH0**. The second movement is a *scherzo* (vigorous and playful) and opens with a pizzicato passage outlining a melody in the **Aeolian mode**, then a second that is very lyrical and played *arco*.

Notate these themes into your portfolio as we begin to investigate more imaginative scoring ideas.



■ **Figure 10.6** The combination of groups of quarter and 8th notes (crotchet and quavers) shows how Ravel uses rhythm to highlight his melody line

ACTIVITY: Psycho strings

ATL

- Media literacy skills: Understanding the impact of media representations and modes of presentation
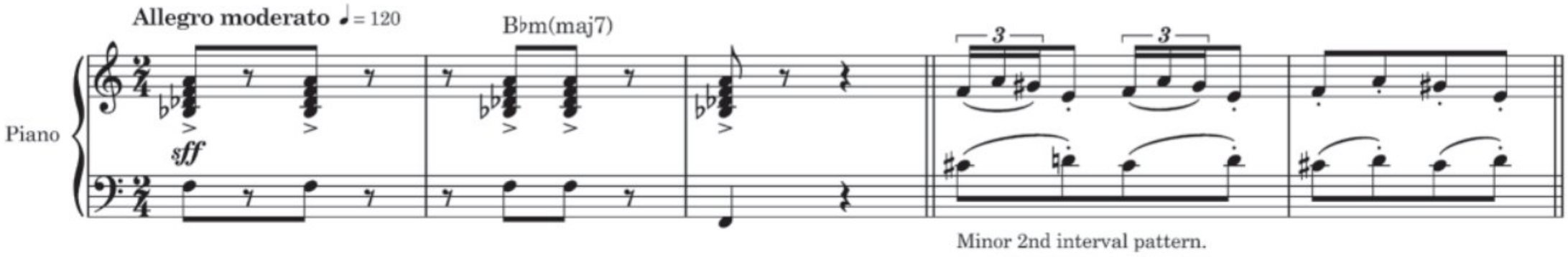
Bernard Herrmann (1911–1975) was a master of using the techniques of motivic development, harmonic colouring and orchestration. By limiting himself just to a string section for the score for *Psycho*, he had to think creatively about each cue, each action and even the thoughts of the characters on screen.

> *"… just as there's tremendous range in black-and-white movies…, Herrmann found tremendous range within this limited group of instruments, the string section. He made the strings extremely dry. He put mutes [on the strings]; … He [also] created percussive effects in the strings."*
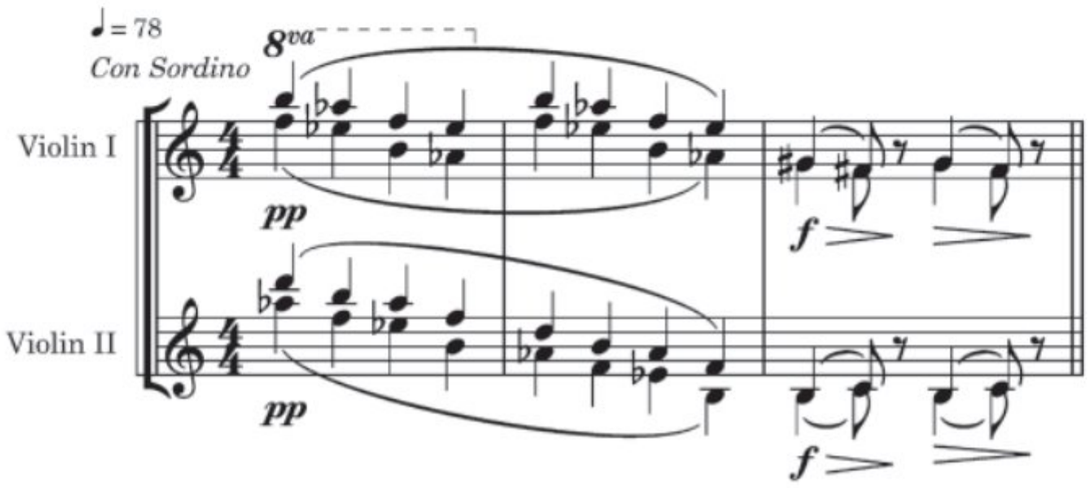
For each of the examples derived from his 1960 score, add your own variation **using** your portfolio and software such as MuseScore or Symphony Pro. We get to learn from the master of suspense!

1. **'Flight': Here the strings play a rhythmic and harmonic idea that repeats throughout the score. Then in measure 4, the minor 2nd interval pattern begins, followed by a triplet phrase (See Figure 10.7).**
 Your turn: Using Herrmann's opening chord, enter it into your software program but create a different rhythmic pattern than in measures 1–2. Now make that rhythmic pattern a little shorter, and add small intervals between the parts for dissonance.
2. **'The City': Here we have descending crotchets (quarter-notes) marked *con sordino* (with mutes). The intervals between the notes in each string part are a combination of perfect 4ths, tritones and perfect 5ths. When played Herrmann-style it creates an eerie atmosphere; an atmosphere suddenly interrupted by the rests in measure 3.**
 Your turn: Notate a series of descending lines for string quartet that use the same intervals, in any order you prefer. Aim to make them smooth, keep the mutes marked as *con sordino* and use rests.
3. **'Temptation' and 'The Package': This theme is for the protagonist as they cover up their theft. Once again, Herrmann varies the two layers by introducing rests, and later in the cue by alternating the ostinato pattern between arco and pizzicato.**
 Your turn: Create a two-layer motif of a longer notes and b shorter notes that make use of the intervals of a minor 3rd and minor 2nd. You can also create variations that are *arco* (bowed) and *pizzicato* (plucked).
4. **'The Water': This theme depicts nature, as well as the crime that is being washed away. There is a mixture of string techniques, from appoggiaturas to trills and tremolos, rising up from the bottom of the ensemble and back down again.**
 Your turn: How would you use these techniques to depict running water? Create a 2–4 measure cue that uses our investigation of string-writing to make your own cue entitled 'The Water'.

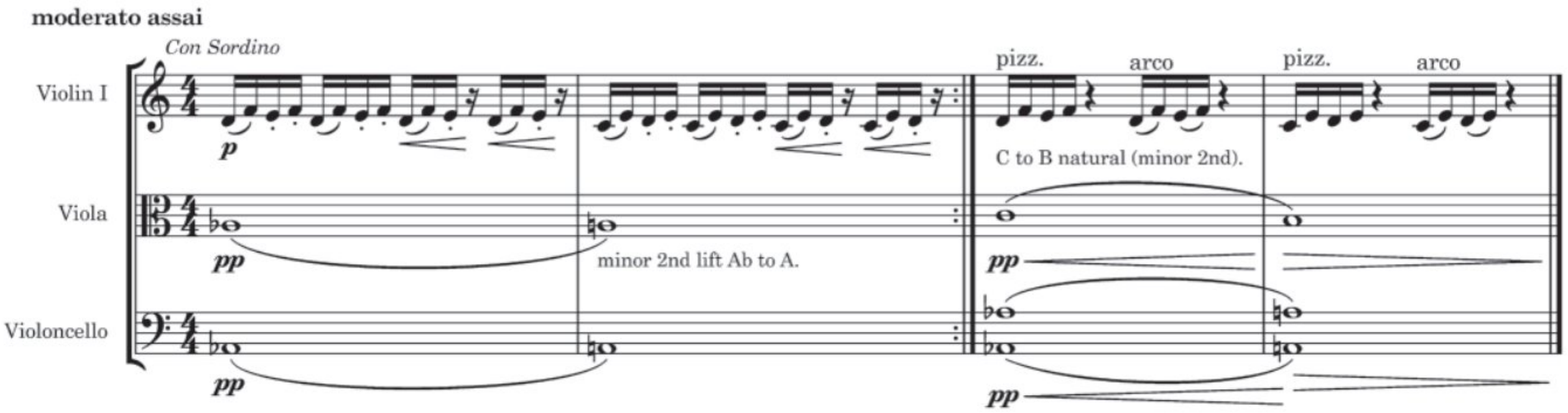
> *"It was growing up on Herrmann that gave me the love of film music that allowed me to become a composer. He's always been my model and my idol,"*
>
> *says film composer Danny Elfman, who has scored many of director Tim Burton's movies.*



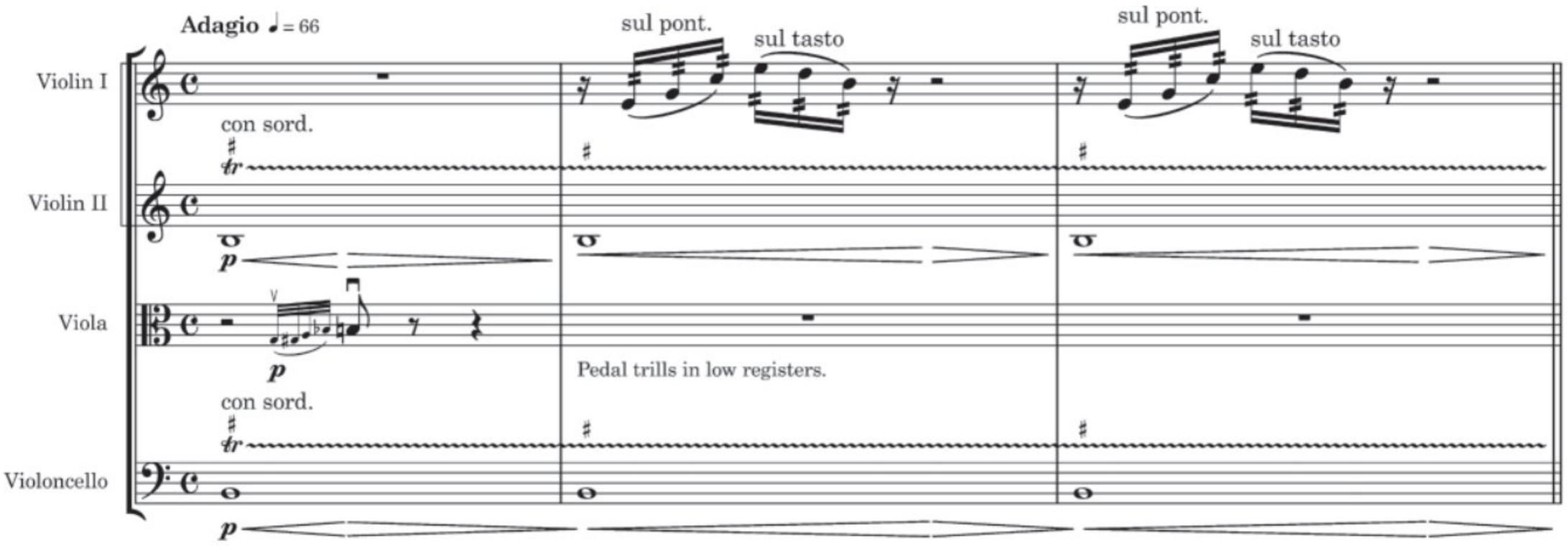
■ **Figure 10.7**



■ **Figure 10.8** Descending lines of strings using intervals of 4ths, 5ths, tritones and then 2nds for the alternate phrase



■ **Figure 10.9** Notice the use of low pedal notes beneath repeated 16th phrases of 'Temptation' and 'The Package'



■ **Figure 10.10** The directions of *sul Ponticello* (at the bridge) and *sul Tasto* (over the fingerboard) give distinctions in colour with the rising and falling phrase

◆ Assessment opportunities

In this activity you have practised skills that are assessed using Criterion C: Thinking creatively and Criterion D: Responding.

How is rhythm used to layer phrases and harmonic colours?

EXPLANATION GAME

Hans Zimmer's (b. 1957) score for Christopher Nolan's *Dark Knight* films has many iconic themes. Listen to the track 'A Dark Knight' on the playlist and write observations in your portfolio based on the following prompt:

'I notice that…' (**use** the acronym **IDEA** to structure your response, making sure to follow your observations with 'It is this way because…').

It is Zimmer's imaginative approach that allows him to layer rhythmic and harmonic lines together to great effect. He is able to find the right colours, tones and string parts to communicate what is happening on the screen. The now iconic running 16th notes with repeated intervals seen on this YouTube score analysis are a good example: **https://youtu.be/NIUzNTHInVA?t=68**

The falling 6th and 4th intervals create not only the feeling of movement, but also of urgency. Combined with the brass notes that crescendo into a chord, Zimmer makes us feel as if the music is growing around the string ostinato. This heroic, but dark, theme is built around the string pattern and a **progression** of i-VI-iv-i in D minor. You can play these chords yourself on an instrument or device (Dm-B♭-Gm-Dm). Software like GarageBand or SoundTrap have a feature called 'musical typing' where you can play these triads on your computer's QWERTY keys (see Figure 10.11).



■ **Figure 10.11** Musical typing is a feature that many musical programs now have

HOW RHYTHM CREATES MOVEMENT

The 1959 Alfred Hitchcock film *North by Northwest* depicts a story of mistaken identity, chase scenes and espionage. The music is again scored by Bernard Herrmann and captures each aspect of the story with the use of melodic and rhythmic motifs. As we can hear in the 'Overture', Herrmann repeats his main ideas in different ranges, instruments and rhythmic patterns. When an idea is repeated, it is then altered slightly each time in ways that can be clearly identified and used by you! This will be the focus of our next activity.

ACTIVITY: *North by Northwest*

ATL

- Communication skills: Using appropriate forms of writing for different purposes and audiences

1 Building with rhythmic motifs

Herrmann begins by introducing a rhythmic motif in the percussion, which is then echoed by a rhythmic device called a *hemiola*. This is where patterns of 3 are replaced by a rhythmic grouping of 2; clearly outlined by the tie joining the two measures in Figure 10.12.

Listen to the track on the playlist to hear Herrmann's musical dialogue of phrase A then B. He adds more instruments with each repetition and then begins to motivically develop his initial idea.
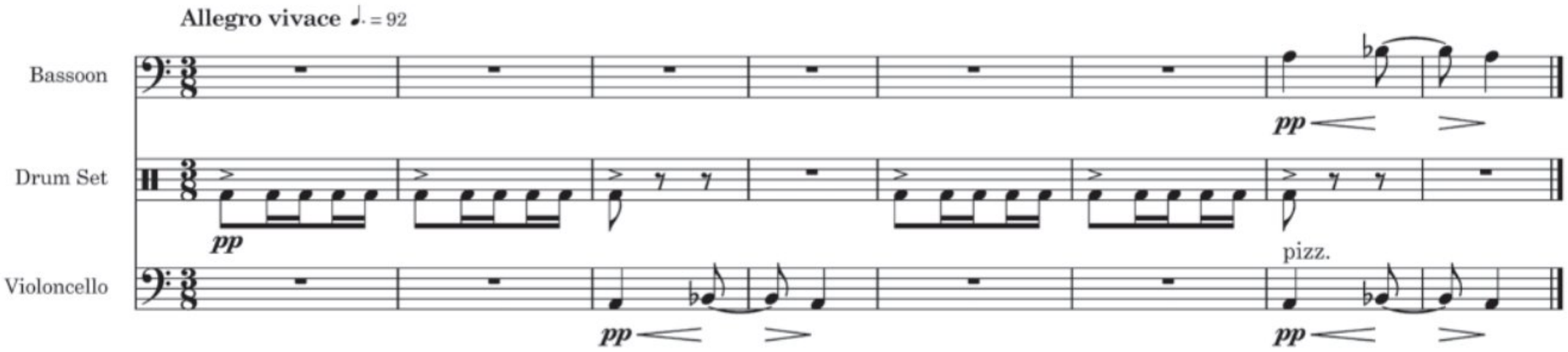


Figure 10.12 Opening *North by Northwest* motif in two phrases of different rhythmic patterns.
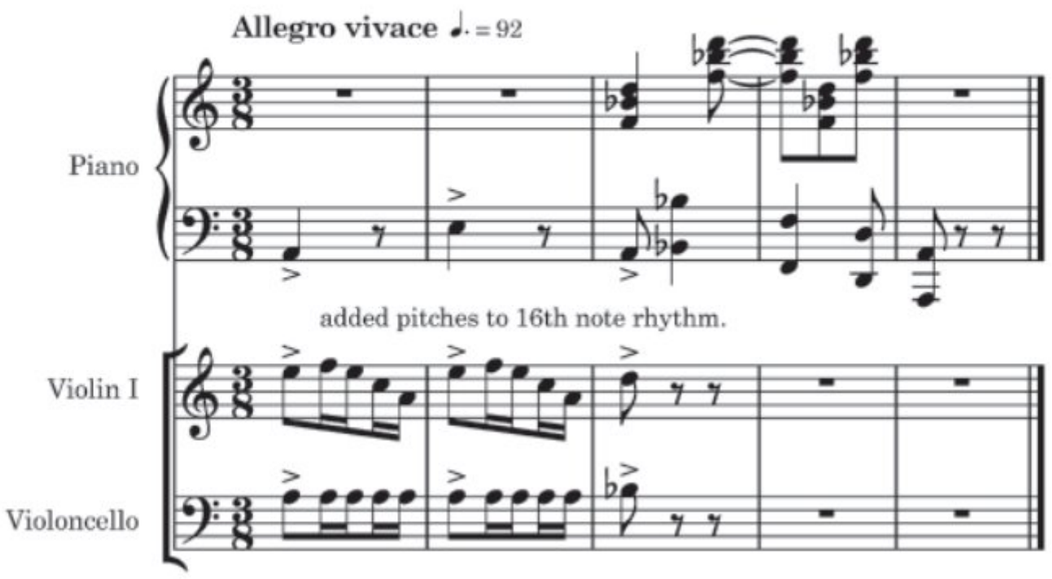


Figure 10.13 Interpolation of main theme (adding in notes).
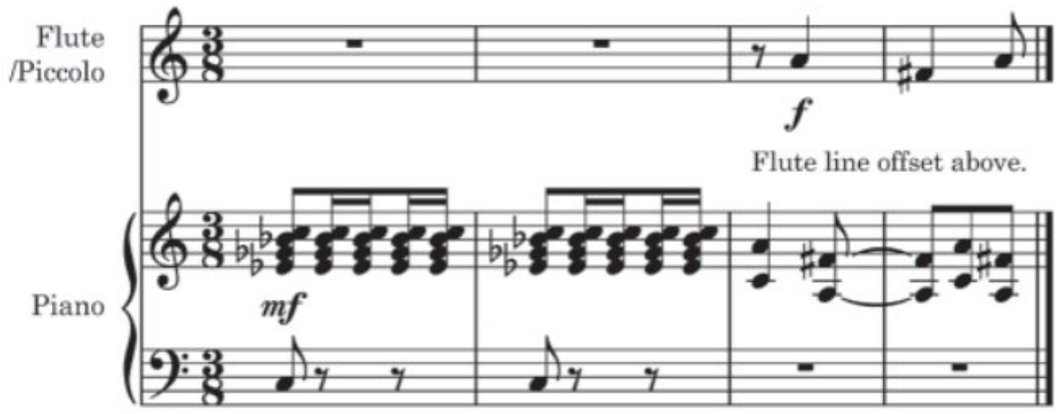


Figure 10.14 Rhythmic and pitch alteration (phrase direction is inverted)
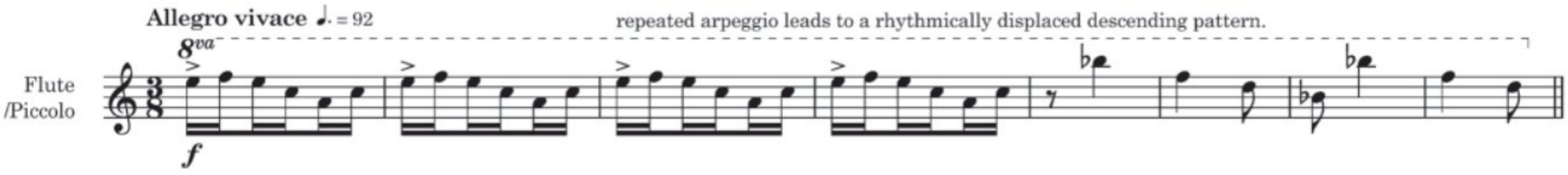


Figure 10.15 Displacement or shifting of the rhythm using a rest in m5

Your turn! Just like Bernard Herrmann, compose a question and answer phrase in the time signature of 3/8 using notation software. Then, using the examples of motivic development given above, create a series of variations as you repeat each phrase.

2 Colouring the theme

Using the themes and variations you create, copy and paste them into different instruments to experiment with pairings such as xylophone and viola, flute and violins, timpani and clarinet or cello and trombone. Be creative and document in your portfolio which pairings you prefer.

Assessment opportunities

In this activity you have practised skills that are assessed using Criterion B: Developing skills and Criterion C: Thinking creatively.

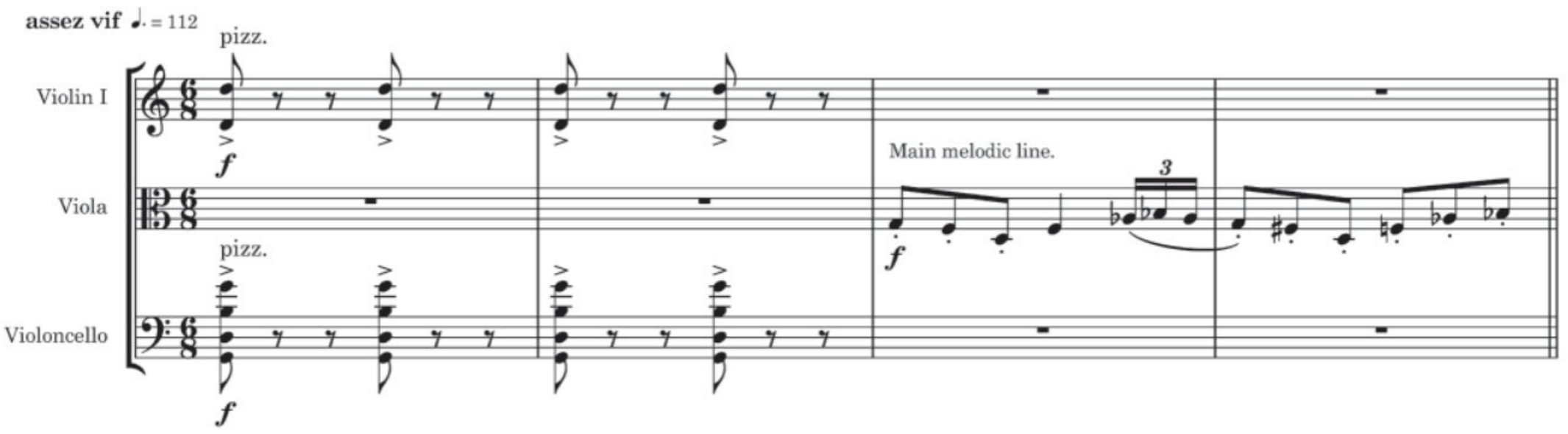
Portfolio presentation

Orchestration tips No. 3
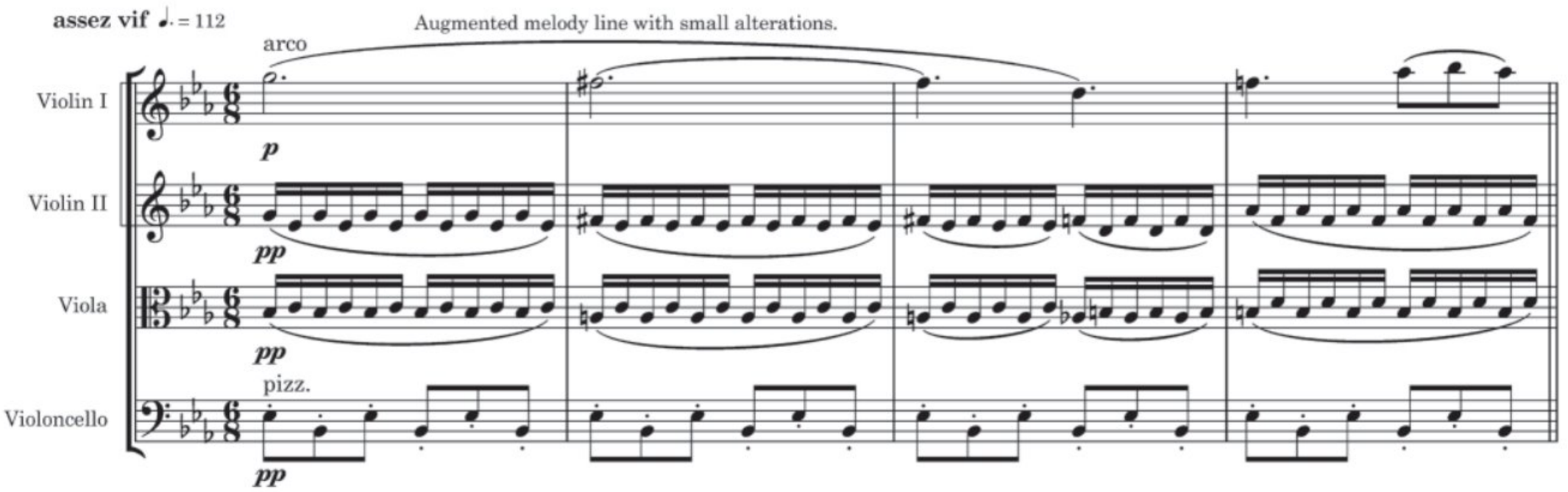
The composer Claude Debussy (1862–1918) wrote *String Quartet in G minor, Op. 10* in 1893. Like the previous Ravel example, we will listen to the second movement *Assez vif et bien rythmé* to understand how Debussy constructed the work.

The use of large open G major pizzicato chords introduces the movement along with Debussy's melody in the viola. This melody is then repeated and echoed in the first violin, and cello, with pizzicato rhythms in groups of 3 and 2; then at measure 56, Debussy develops this melody by using rhythmic **augmentation**, stretching 1 measure into 4!

Add this melody to your portfolio, as well as its 'augmented' version and any other interesting techniques you find on the YouTube score video:
https://youtu.be/-8I7uHb7GY0?t=373



■ **Figure 10.16** Opening pizzicato chords with viola melody



■ **Figure 10.17** Violin augmented line with pizzicato and rapid trill-like accompaniment mm56–59

What is idiomatic orchestration?

CATS AND ROOF-TOPS

Danny Elfman's Theme: 'Selena Transforms, Part 2'

Presented in Tim Burton's 1992 film *Batman Returns*, the character transforms into a villain with a cat-like persona. To do this, composer Danny Elfman (b. 1953) uses extreme registers from the top of the violins to the bottom of the basses. In addition to his effective 2-measure motif, Elfman orchestrates the notes with **glissandos** and *tremolos*. The effect is extremely powerful in the scene that you can watch here: **https://youtu.be/z6p49kvvt18?t=73**

Hans Zimmer's Theme: 'Mind If I Cut In?'

In this theme, Zimmer takes a different approach, once again supported by a higher register piano line over a continual **pedal** point on 'D'. Zimmer's approach is to take a three-note motif and develop it over this pedal, twisting it around as a trill, displacing the rhythm and changing interval sizes, while always returning to the 'A natural'.

Take a moment to watch 'Mind If I Cut In' on YouTube performed (**https://youtu.be/q-oCWCsMwNc?t=29**) and analysed with score (**https://youtu.be/UHX7huD76b0**). Ask yourself: What new ideas do I have about this concept of 'scoring using an instrument's specific techniques' that I didn't have before?

CREATIVE QUESTIONS

How would you write music for a character who is **imitating** a cat? Would you **explore** the capabilities of an instrument to see what it could do?

You would imagine the traits of a cat, maybe the sounds they make, and even possibly imagine the way a cat walks, to recreate this in music.

1. **In pairs, brainstorm a series of ideas to represent the idea of a 'cat' through music.**
2. **Look over the list and transform some of the questions into questions that challenge the imagination. Ask yourself: What would it be like if…? What would change if…? What would this sound like on a violin, viola or cello?**
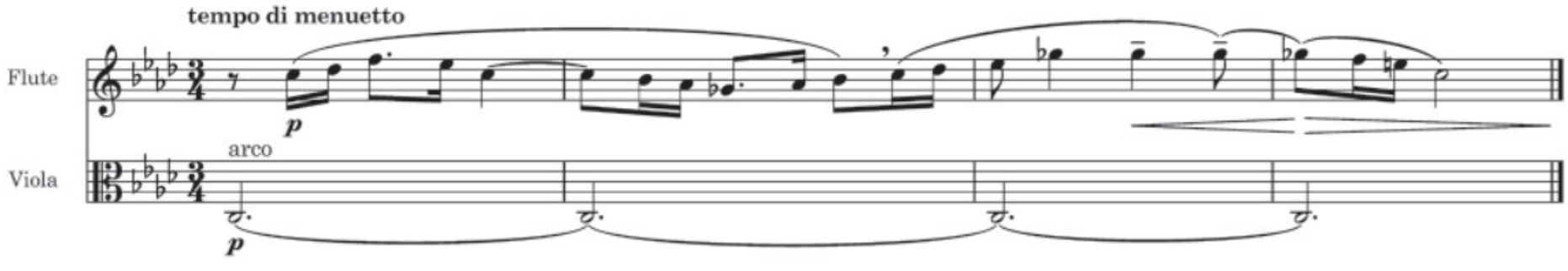
Portfolio presentation

Orchestration tips No. 4

Claude Debussy's *Sonata en Trio for Flute, Viola and Harp, L. 137*, written in 1915, is a work that sounds as if it were from the future. The combination of the three instruments and Debussy's melodic theme cleverly outlines its structure. The theme is broken into two halves by its breathing point, and returns each time to the note 'C' over a C pedal.

Additionally, the rising and falling shape of the melody has elements of the whole-tone **scale**, and a Japanese **mode** called *Mayako-bushi* in the opening three notes.

The second movement, entitled 'Interlude', can be viewed with score here: **https://youtu.be/ml-wlmMNU6c?t=369**. In your portfolio, make observational notes of how Debussy *orchestrates* the theme (that is, who gets to play the melody and when). You will find he splits the melody in half and even fragments or joins parts together.



■ **Figure 10.18** Interlude from Debussy's *Trio*

ACTIVITY: Vertigo

ATL

- Creative thinking skills: Creating original works and ideas; using existing works and ideas in new ways

In our final look at music by Bernard Herrmann, we are going to investigate his power of harmonic colouring around the minor–major 7th or *Herrmann Chord*. Herrmann's use of chords, **arpeggios** and how he combines melodic motifs called **fragments** will have you **creating** your own thriller-style scores in no time. This activity is designed for you to experiment and perform selections from his 1959 score *Vertigo*.

1. **Opening ostinato**
 Hermann's opening 2-measure motif is a wonderful example of writing that embodies good storytelling and a harmonic technique called polychords (more than one chord at once). The opening minor–major 7th chord is set in contrary motion arpeggios to represent 'vertigo', but there are also two polychords that represent *vertigo* and *obsession*. Both are built with a minor triad, and then a major triad on top.
2. **Colouring a motif**
 Herrmann's love themes do not escape his harmonic colouring either. In the track entitled 'Scène d'Amour', we get a 2-phrase melody outlining an E minor 7th chord, doubled in violins 1 and 2. Herrmann then utilises fragments of this melody throughout the cue. However, underneath the violins, Herrmann directs the second violins to separate (making them sound thinner) and to play an accompaniment that outlines a see-saw-like progression of A diminished (min7♭5) to A minor. It is the wonderful 3 notes used in the last C major 7th chord, voiced close together, that gives the heart-wrenching *sorrowful* sound.

Your Turn! Play the polychords from Herrmann's opening motif and **develop** your own film-score ostinato for a thriller using just harp and strings. You can also experiment playing the chords from 'Scène d'Amour' and orchestrate them yourself for harp and strings.

Notate your ideas into MuseScore or Symphony Pro and / or make videos of yourself playing the different chord progressions. These techniques will return as we continue to study different scores.

Assessment opportunities

In this activity you have practised skills that are assessed using Criterion A: Knowing and understanding and Criterion C: Thinking creatively.
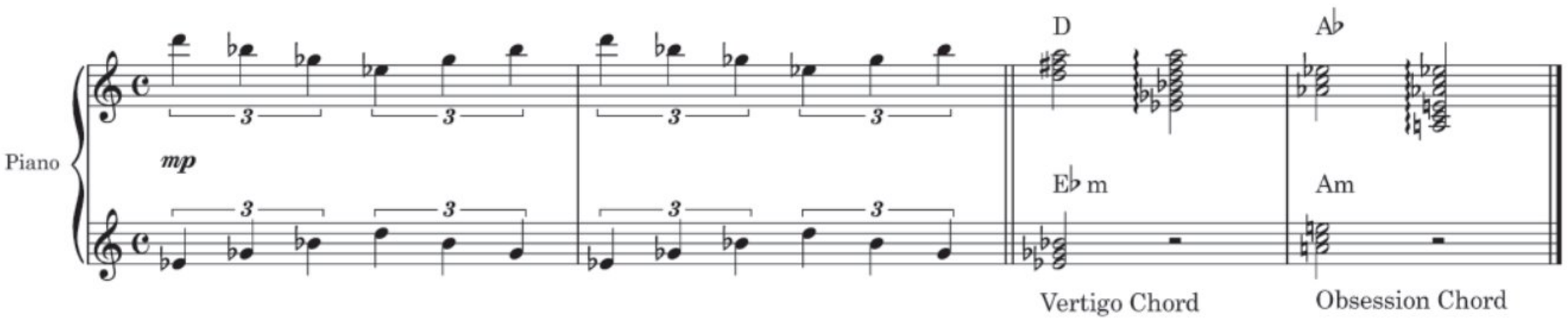


Figure 10.19 The *Vertigo* motif, *Vertigo Chord* (E♭ minor, D major), *Obsession Chord* (A minor, A♭ major)
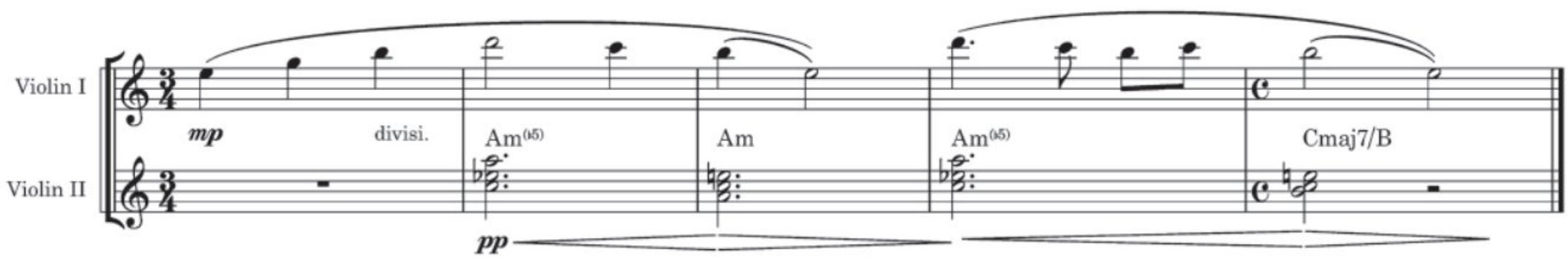


Figure 10.20 'Scène d'Amour' by Bernard Herrmann shown with melodic phrase and chords

How can a melody or rhythm be reinterpreted for storytelling?

In this section, we are going to use our ears to deconstruct musical ideas aurally. Rhythms, melodies and chords are all very important; however, the ability to tell a story and capture this in music is the ultimate aim of any film composer.

SEE–THINK–WONDER
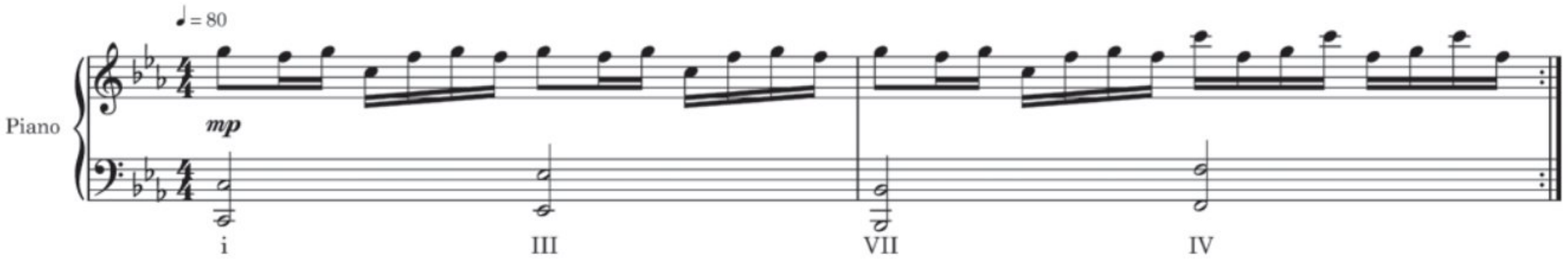
Listen to the track 'Home Fires' (2015) by composer Samuel Sim on the playlist or via Sim's Soundcloud at **https://soundcloud.com/samuel77/home-fires-main-theme**. Now in your portfolio **use** the writing prompts below as well as the acronym **IDEA** to answer the following questions:

1. **What do you hear?**
2. **What do you think about all the different parts?**
3. **What does it make you wonder about the story?**

"The lyrics are obscured by the fact that there are several different lines being sung at once, but that's part of the point. Ultimately they [the protagonists] found strength in their unity with others… The music has a very circular structure and I think the repetition certainly helps…"

Samuel Sims

As we look to the next activity, bear in mind that if you write music for films, games or media, you are a storyteller.



■ **Figure 10.21** Ostinato and initial harmony from *Home Fires*

IMAGINING AND TRANSFORMING

In 2011, a very special short film was developed by a company called Moonbot Studios. This animation, and subsequent children's book called *The Fantastic Flying Books of Mr Morris Lessmore*, has been described as a powerful example of storytelling. However, before we step into our musical activities, let's take a few moments to watch the animation here: **https://youtu.be/Ad3CMri3hOs**

The composer of this animation, John Hunter from **www.breed-music.com**, was nominated for an Oscar for his masterful work. In a rather unusual twist, Hunter was asked to collaborate with the directors, making sure his music assisted in the storytelling project. In the end he wrote 'only' 17 minutes of music, but it was the approach he took that we will now explore.

"It was a very unconventional way of working but it really helped tailor the music like no other method"

John Hunter



■ **Figure 10.22** 'Pop Goes the Weasel'

ACTIVITY: *The Fantastic Flying Books of Mr Morris Lessmore*

ATL

- Media literacy skills: Interacting with media to use and create ideas and information

Listen again to Hunter's score on Soundcloud: **https://soundcloud.com/johnnyhuntman/suite-from-the-fantastic**. As you will notice, most of the background music is based around the traditional tune 'Pop Goes the Weasel', seen in Figure 10.22. In fact, there are many key moments where Hunter deliberately **develops** this theme to suit the action on screen.

Using the animated clip or Soundcloud link, **create** a list in your portfolio of instances where you believe the theme has been transformed. Make sure you give a description of the orchestration and how it is **presented**, for example:

1 Sequence of the melody
A *sequence* repeats a phrase at a higher or lower pitch. Hunter also places it upside down and in the bass.

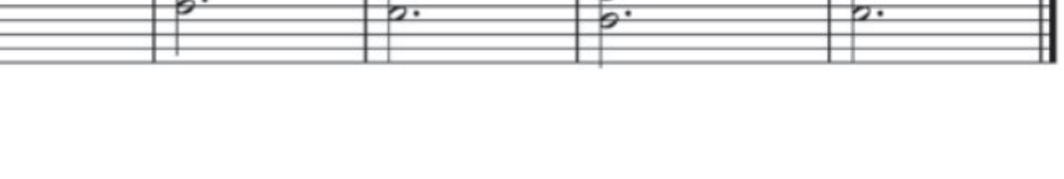


Figure 10.23

Fragmented and altered rhythmically, this trumpet line is used when the wind blows everything away.
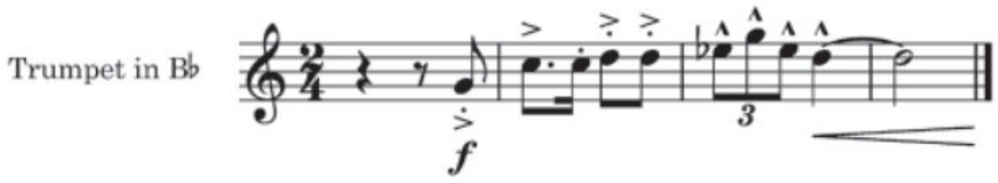


Figure 10.24

3 Transposition into minor
'Pop Goes the Weasel' at a slower rhythm (*augmentation*) and in a minor key (called *transposition*).

Figure 10.25

Keep listening to the music behind the animation and you will find many more instances of motivic development. What if you came up with some of your own?

Using MuseScore, Symphony Pro or manuscript, transform 'Pop Goes the Weasel' using sequences or fragmentation or by placing it into a minor key. Then, ask a friend to listen to the original and altered versions to see if they can **identify** how you transformed it.

Assessment opportunities

In this activity you have practised skills that are assessed using Criterion A: Knowing and understanding and Criterion B: Developing skills.

How do composers restructure their work to identify with emotion(s)?

WHY DO WE HAVE PIECES ABOUT SPIDERS?



■ **Figure 10.26** *Spider-Man*

Music exploration: *Spider-Man*
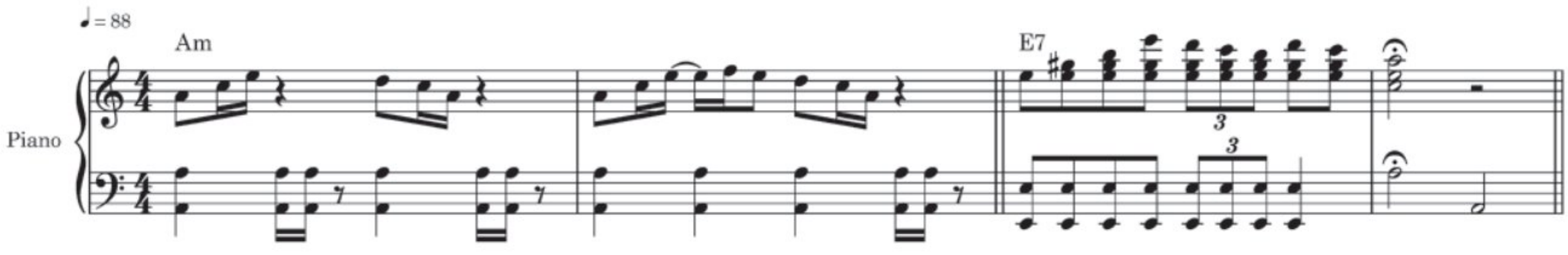
In the 1960s, a cartoon theme struck home with its easy-to-remember lines and blues-based structure. Composed by Paul Francis Webster and Robert 'Bob' Harris, the theme for *Spider-Man* helped create a foundation for the many variations that were to come. You can search for it online with Musicnotes.com: **www.musicnotes.com/sheetmusic/mtd.asp?ppn=MN0108407_D2**

Then in 2017, the classic tune was re-orchestrated by composer Michael Giacchino (b. 1967) for the films *Spider-Man: Homecoming* and 2019's *Spider-Man: Far From Home*.

1. In your portfolio, generate a list of observations by listening to the original tune on the playlist. You can make them very general or more analytical (such as noticing the arpeggio-based phrases).
2. Then, compare the newly orchestrated theme to that of the classic 60s' version. What is the same and what is different? (Make sure you use terms that we have been discussing, such as augmentation and **diminution**.)
3. If you were to score music for a 'spider-ish' film, what string techniques would you use to create the idea of a wall-crawling superhero?

Cm (i)	Cm (i)	Cm (i)	Cm (i)	Fm (iv)	Fm (iv)
Cm (i)	Cm (i)	G (V)	G (V)	Cm (i)	Cm (i)

■ **Figure 10.27** Original *Spider-Man* theme was based on the 12-bar blues



■ **Figure 10.28** Transcription of Giacchino's orchestrated version now in 4/4 and the key of A minor

ACTIVITY: Harmonising melodies

ATL

- Affective skills: Practising dealing with change. Practising strategies for overcoming procrastination

Just as with John Hunter's development of the tune 'Pop Goes the Weasel', we need to take our experimentation to the next level with harmonic colouring. To do this, we will **use** a different nursery rhyme: 'Incy Wincy Spider'.

Using the following steps:

- **create a series of motivic phrases from the melody in Figure 10.29**
- **create a series of reharmonised phrases for our new variations of it.**

Motivic development

With the tune being written in a 6/8 rhythm of 4 equal phrases, there are a few options to start with: **a** fragmentation, **b** sequencing, **c** augmentation and diminution, **d** interpolation (adding notes in between the motif) and **e retrograde** (playing the theme backwards).

Try experimenting with a few different versions until you are happy that you have something ready to harmonise.

Harmonic colouring

Depending on the notes you came up with, and how you altered the original tune, you will have to get creative and play different chords along with your motifs. Here are some approaches you can use:

- **Use the notes of your motifs to create chords.**
- **Use the Herrmann sound, or his idea of polychords.**
- **Stick to using the chord formula for G major I ii iii IV V vi vii° VIII.**

Try playing Figures 10.30 and 10.31 on your instruments or a device. Whatever harmonic colouring you end up **creating**, document it with recordings and diagrams in your portfolio.

Assessment opportunities
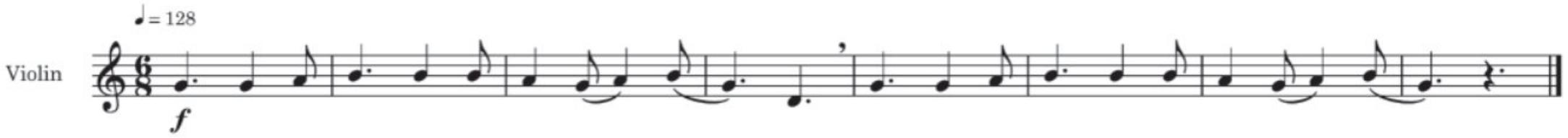
In this activity you have practised skills that are assessed using Criterion B: Developing skills and Criterion C: Thinking creatively.

Portfolio presentation

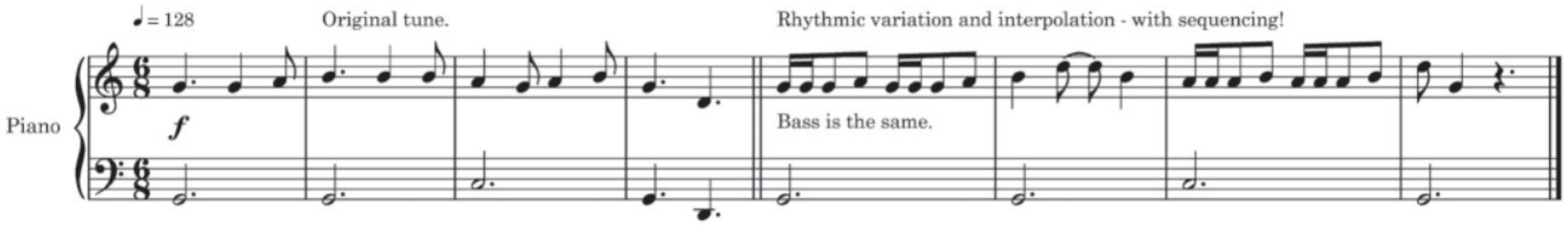
Orchestration tips No. 5

The composer Sergei Prokofiev's 'String Quartet No. 1 in B Minor, Op. 50', written in 1930, opens with a lyrical theme that is clearly built upon a chordal pattern played by short *spiccato* strings (marked with the shorter arrow heads below the note heads):
https://youtu.be/3TRIQP7WNkc?t=2
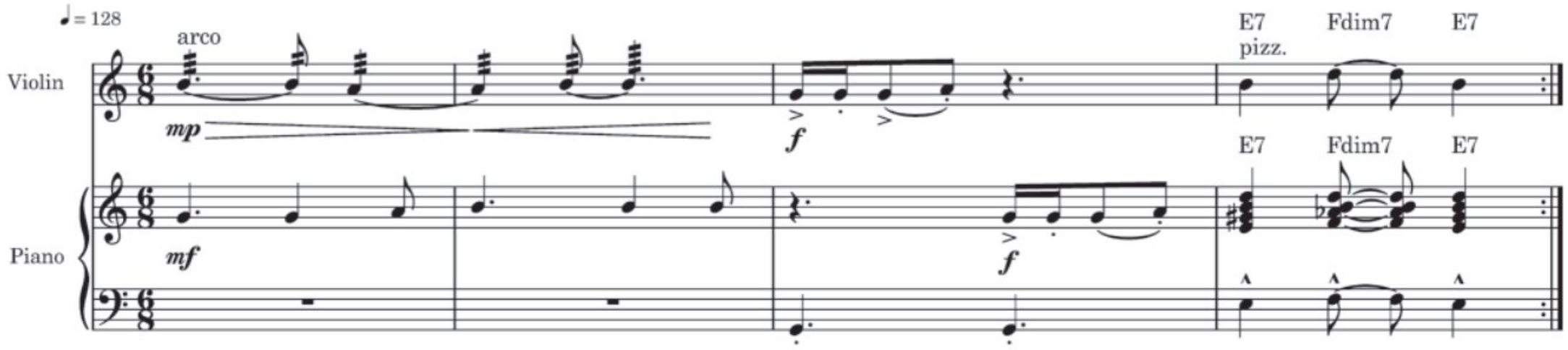
Using the pattern of chords outlined in the second violin and viola, use the harmony of the first four measures B minor (i)-G major (VI)-C Major (II)-G major (VI) to write your own variations of Prokofiev's theme. Notate in your software or manuscript the example opposite, then repeat it with your own variations. Try to incorporate one other string technique with the spiccato inner string parts.
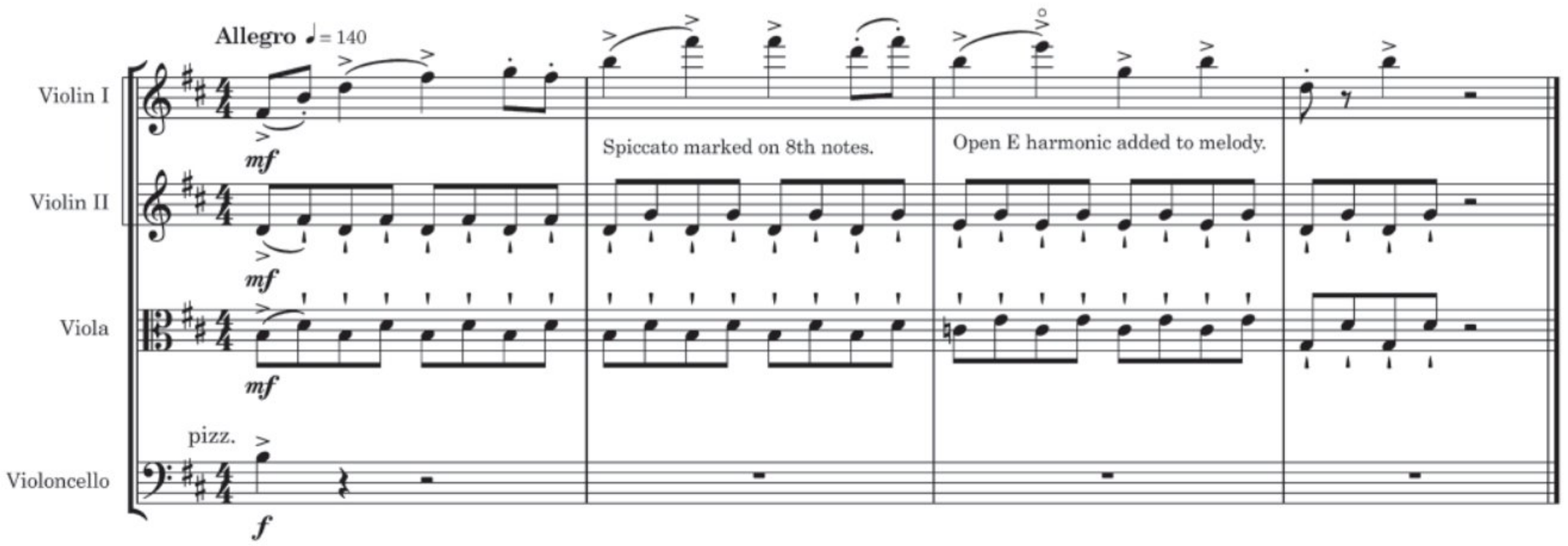


■ **Figure 10.29** Traditional tune 'Incy Wincy Spider'



■ **Figure 10.30** 'Incy Wincy' motivic development in G major with I-IV-V harmony in the bass



■ **Figure 10.31** 'Incy Wincy' harmonic colouring examples, with inspiration from Bernard Herrmann!



■ **Figure 10.32** 'String Quartet No. 1 in B Minor' theme

What is musical texture?

THINK–PUZZLE–EXPLORE

'The Watched Clock' is a work by cellist Peter Gregson and multi-instrumentalist Rael Jones. It is not a film-score; however, it blends all of the elements of film-scoring into a unique, moving **texture** of different parts. Listen to the piece on BandCamp at **https://raeljonespetergregson.bandcamp.com/track/the-watched-clock** or on the playlist. As you listen, try to sketch or list the different musical lines as they enter, and describe which sound you believe represents the 'clock motif'.

Presented predominantly on string instruments, in long moving lines, this work is built around a ticking quarter (crotchet) pattern on G#. Added to this is a series of intervals from a perfect 5th to a minor 6th. Then, as you listen to the track, you start to perceive that there is more happening *around* this motif. This is called *texture*; texture can move, change, adapt, and intertwine with the foreground, middle-ground and background of a work. In your portfolio, **use** the following prompts to brainstorm ideas around the concept of texture in music:

1. **What do you think you know about this topic?**
2. **What questions or puzzles do you have?**
3. **How can you explore this topic further?**

Texture is a vital component of film-scoring and you find composers make very specific decisions about the textural layering of their music.



Figure 10.33

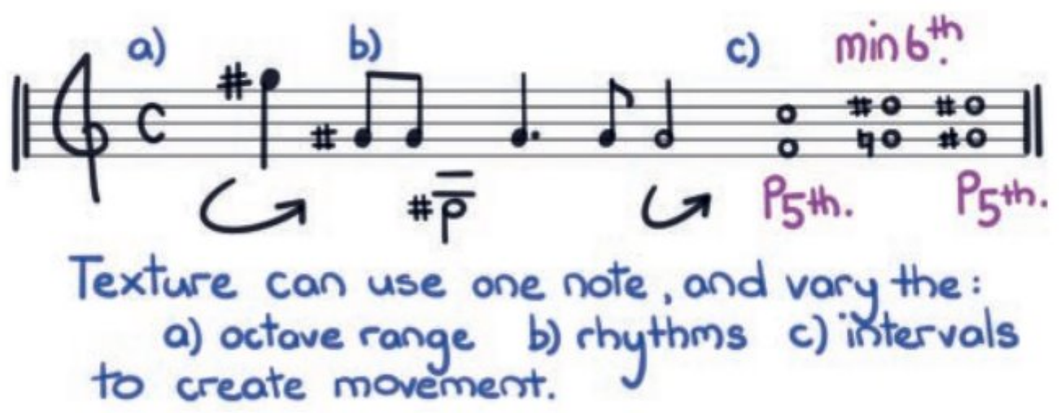


Figure 10.34 You can sketch out different patterns in your portfolio around a single note

LAYER UPON LAYER WE BUILD A STRUCTURE

Blake Neely is the composer for CW's arrow-verse, starting with the TV series *Arrow*. Developed by Greg Berlanti, Marc Guggenheim and Andrew Kreisberg, the plot is based on the DC Comic series of the same name. However, it is Neely's music that has crafted an entire world of villains, heroes and iconic themes for each show.

> *"They [the producers] wanted to keep the show grounded, but dark – always emotional, always about [the] journey."*

Listen to the track 'Five Years', from Season One of *Arrow*, on the playlist. In under 2 minutes, the cue expands and develops on a theme of small, connected interval shapes, to crescendo with drums and a final combined texture. The track could have moved in any direction: of a bright and optimistic hero, or in this case what feels like a focused yet tortured hero.

Surrounding Neely's thematic writing are specially chosen interval patterns, rhythmic figures and arpeggios. These are added as **complementary** layers to push the action forward. Use Figure 10.35's 'Super-Hero Music Palette' to complete the activity below.

ACTIVITY: Superhero textures

ATL

- Transfer skills: Combining knowledge, understanding and skills to create products or solutions

Imagine you have been approached to write the next instalment of *Arrow*. You meet Blake Neely and he discusses his music with you and then asks for a series of themes to pick for the new series. Open your portfolio and, **using** the ideas above, **create** a collection of notated and / or recorded themes to **present** to him. You can also evaluate the themes from 'The Flash' and 'Supergirl' on the included playlist.

1. **Use string instruments and / or piano initially.**
2. **Include a combination of heroic and darker colouring of intervals or arpeggios.**
3. **Include at least one rhythmic ostinato.**

Using manuscript or software from MuseScore to SoundTrap and GarageBand, prepare five examples for your future meeting with Neely. Make sure they are labelled with the three criteria and good luck!

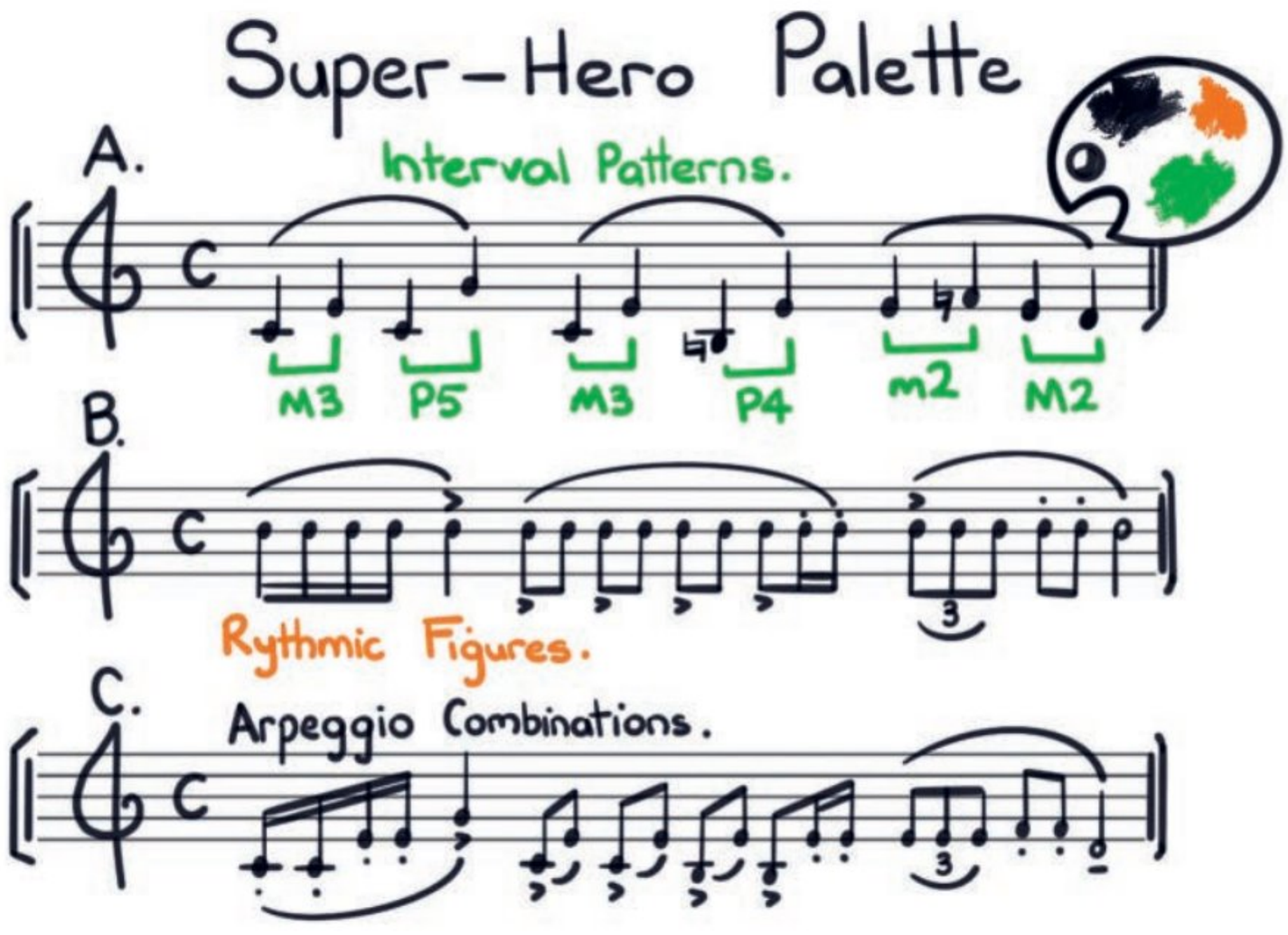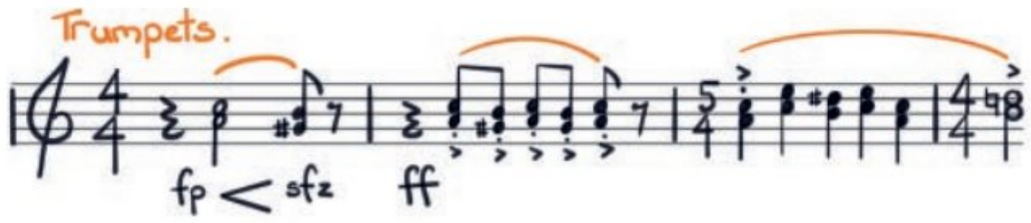


Figure 10.35 Experiment with these colour options to create a super theme

Assessment opportunities

In this activity you have practised skills that are assessed using Criterion C: Thinking creatively and Criterion D: Responding.

What is harmonic colouring?
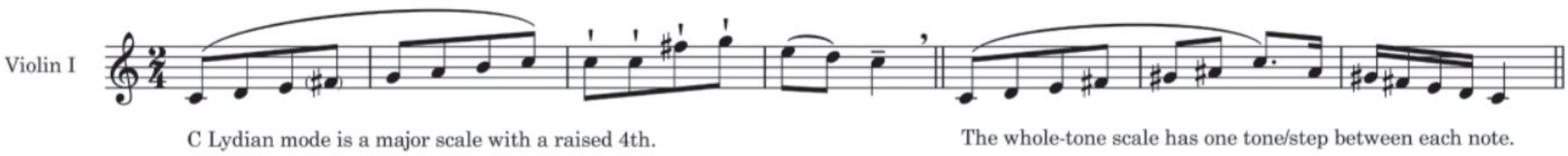




■ **Figure 10.36** In the 2007 film Stardust, composer Ilan Eshkeri used Prokofiev's 'Wolf' theme for the death of one of the witches – by wolf!

MAGIC AND FANTASY
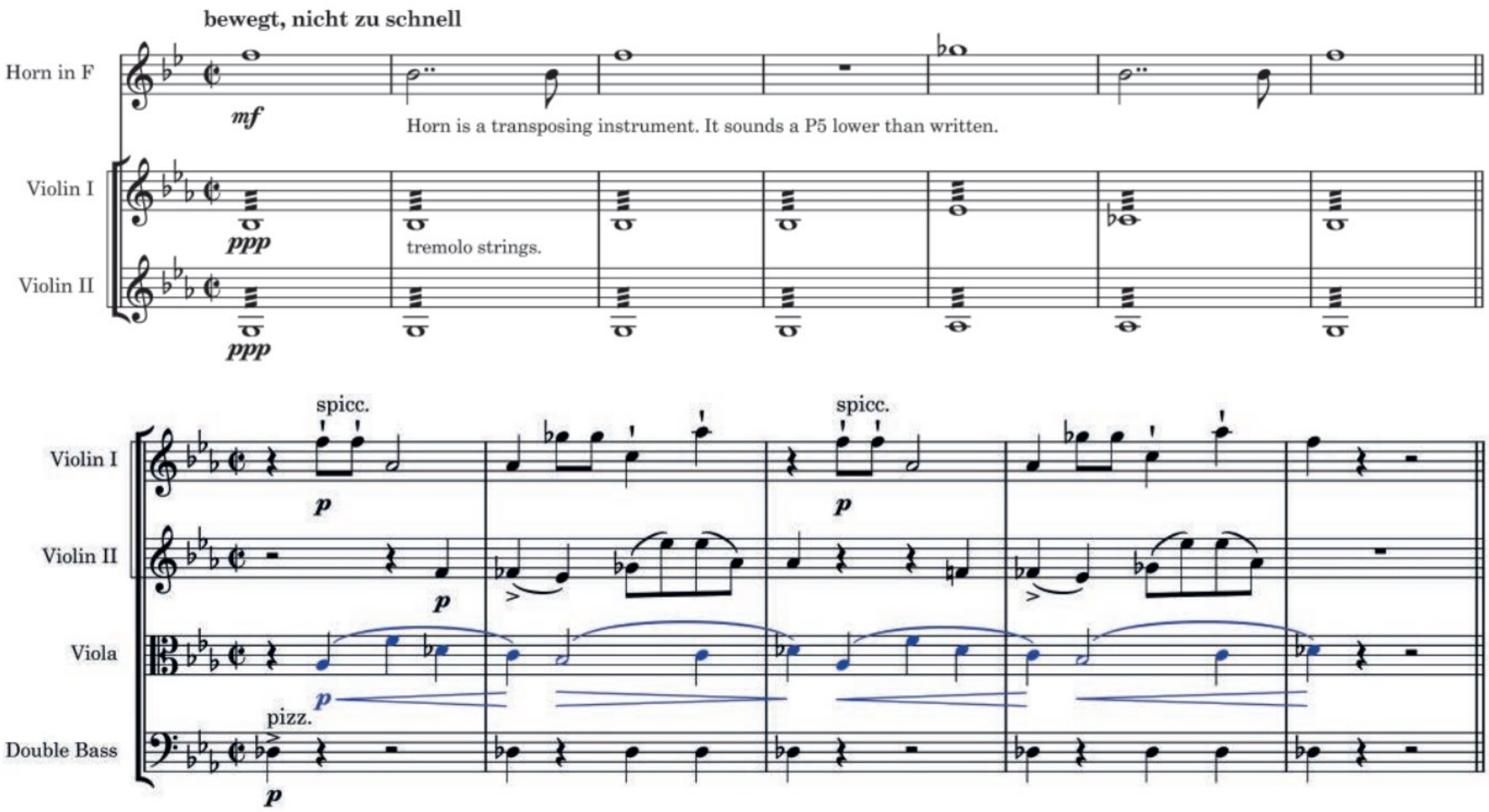
In most film scores there exist elements of cliché references of the **Lydian mode**, or the Whole-tone **scale**.

If we go back to the Romantic era, it is also possible to find examples of imaginative writing using texture; works such as Anton Bruckner's *Symphony No. 4*.

From the opening horn theme to the echoing lines in the woodwinds, the string section provides everything from rhythmic variation to colouring and textural support.



■ **Figure 10.37** Lydian mode and whole-tone scales



■ **Figure 10.38** Horn and lyrical themes from Bruckner's *Symphony No. 4* first movement

I USED TO THINK… BUT NOW I THINK…

Based upon the novel by author Neil Gaiman, the 2017 film *Stardust* is a ride through a magical land with creatures, witches and heroes.

One of the protagonists is a living star, and her journey is difficult. Composer Ilan Eshkeri (b. 1977) therefore included and altered the tune 'Twinkle Twinkle' with *interval contraction* (reducing the size of the intervals) and *rhythmic augmentation* (making the rhythms longer). You can hear his cue on the playlist and in Figure 10.39.

Listen to the track on the playlist and draw a schematic or graphic diagram of the first movement. Try to show the themes, how they change and any string techniques you can **identify**. Then, with your drawings in front of you, **use** the following prompts as discussion starters to compare notes with a partner or small group:

1. **I used to think… orchestral music… romantic music… fantasy-based music…**
2. **But now I think… now I realise… now I want to… upon reflection, I can see…**

ACTIVITY: Motifs from other motifs

ATL

- Transfer skills: Changing the context of an inquiry to gain different perspectives

Eshkeri was very clever in his process to score *Stardust*. **Using** either his version of 'Twinkle Twinkle', 'Coronation' or Prokofiev's 'Wolf', create your own variation and harmony to Figure 10.39 'Twinkle Twinkle.'

To next outline heroism, and a royal bloodline, Eshkeri colours an octave melody using the F major chord formula Dm (vi) / B♭ (IV) / F (Isus2) / C (V) / Gm (ii) / E♭ (bVII) / B♭ (IV) / and back to F (I) with arpeggios in the track 'Coronation' (Figure 10.40).

Hint

Use the F major chord formula, and if the note is in the chord, play it and experiment adding extended notes.

Assessment opportunities

In this activity you have practised skills that are assessed using Criterion B: Developing skills and Criterion C: Thinking creatively.
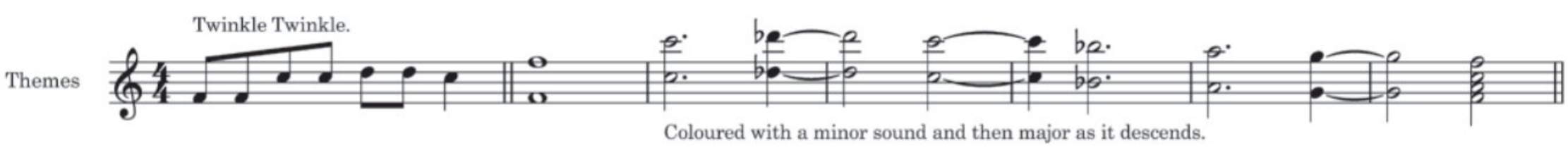


Figure 10.39 'Twinkle Twinkle' for 'Shining' from the score of *Stardust*
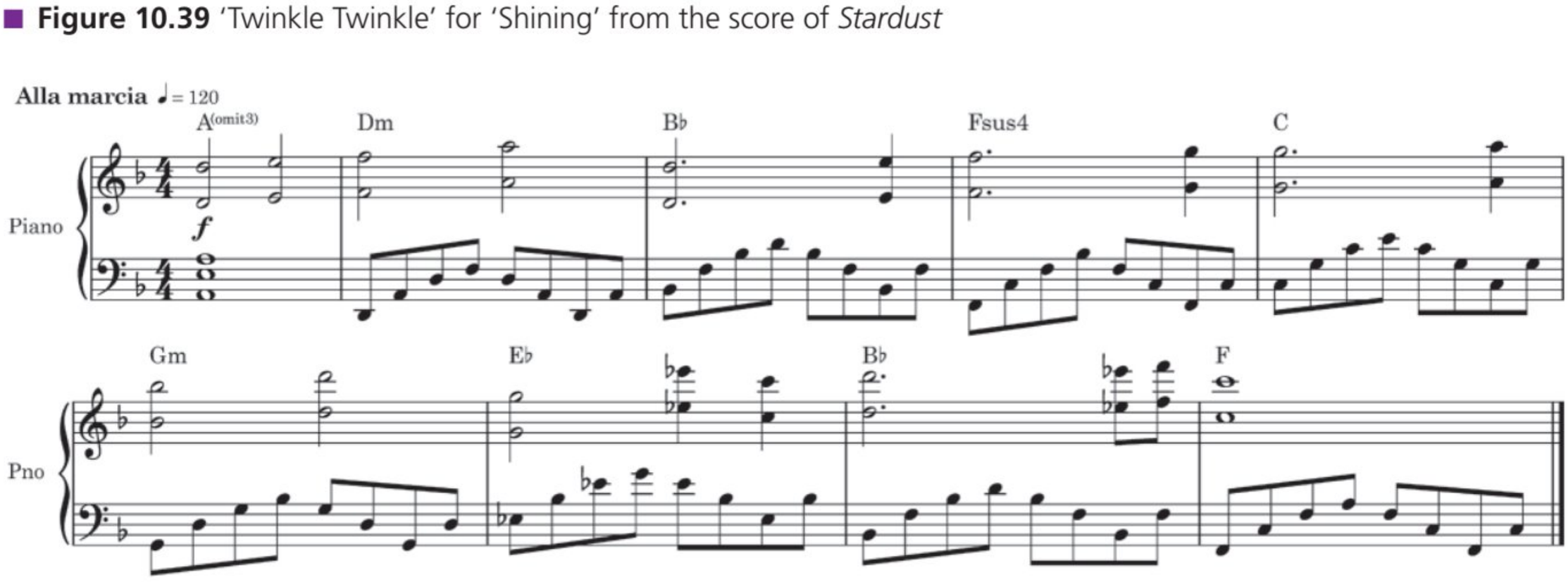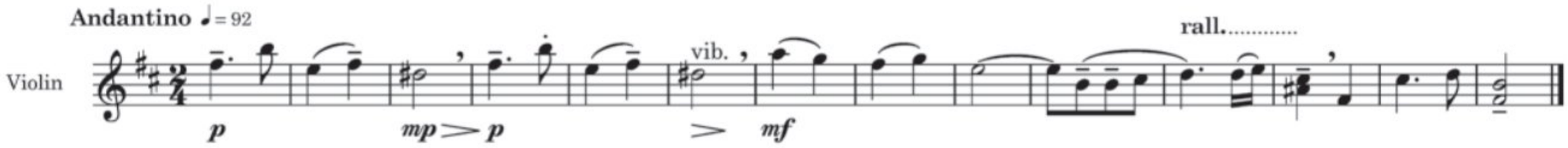


Figure 10.40 'Coronation' harmonisation using F major chord formula with arpeggio accompaniment

MEET THE COMPOSER: ALAN MENKEN

Alan Menken (b. 1949) is a songwriter, conductor, magical composer and story-teller. His works for Disney Animation Studios cover everything from *The Little Mermaid* and *Aladdin* to the 2010 film *Tangled*. Menken is *the* composer to study for magic and fantasy. Listen to a short cue on the playlist called 'Healing Incantation', and identify the string techniques that colour its simple melodic phrasing.



■ **Figure 10.41** 'Healing Incantation' melody transcribed from the 2010 film *Tangled*
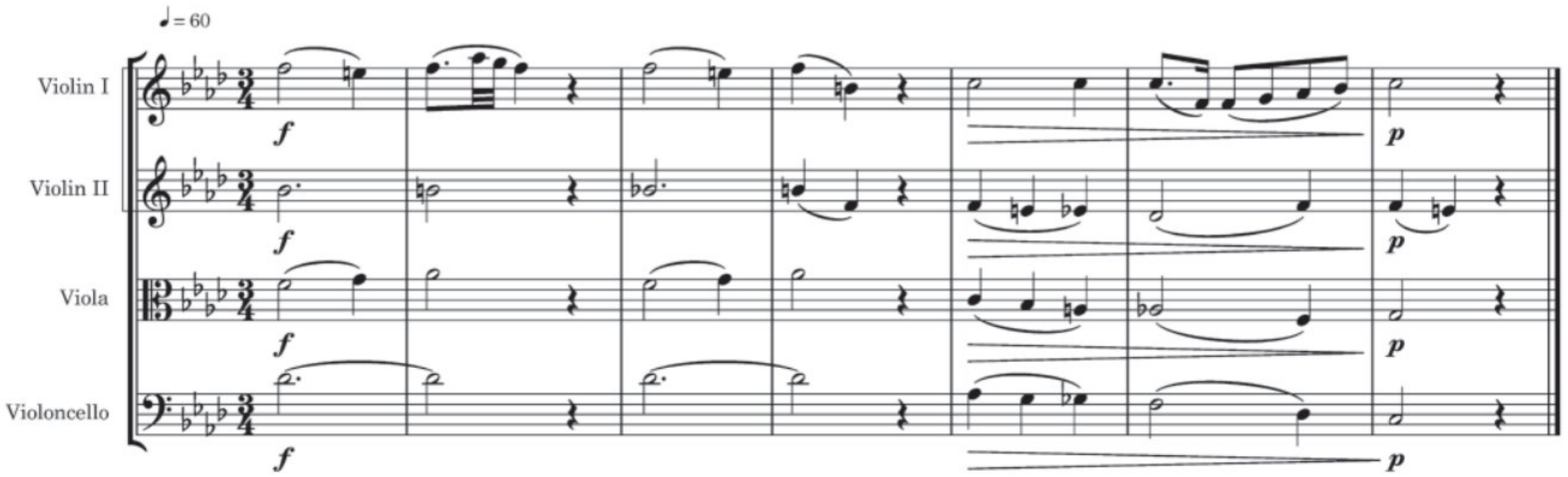
Portfolio presentation

Orchestration tips No. 6

Composed between 1873 and 1874, Pyotr Ilyich Tchaikovsky's 'String Quartet No. 2 in F major, Op. 22', is a perfect example of melodic writing that uses space and small motifs beautifully in the strings. You can view a version of the score on the playlist as well as here: **https://youtu.be/2gDbYdAgdvc?t=1016**

In the third movement, the melody can be broken into three separate phrases of measures 1–2, then 3–4 and finally 5–7 that are then repeated from measure 8 with a warmer tone in the cello. Finally, Tchaikovsky rhythmically *fragments* and **inverts** (turns upside down) parts of the first melodic motif to repeat it over a 'C' pedal in the viola.

Document this work in your portfolio and try to write your own motivic variations of Tchaikovsky's three phrases. You can use any of the development techniques we have discussed so far.
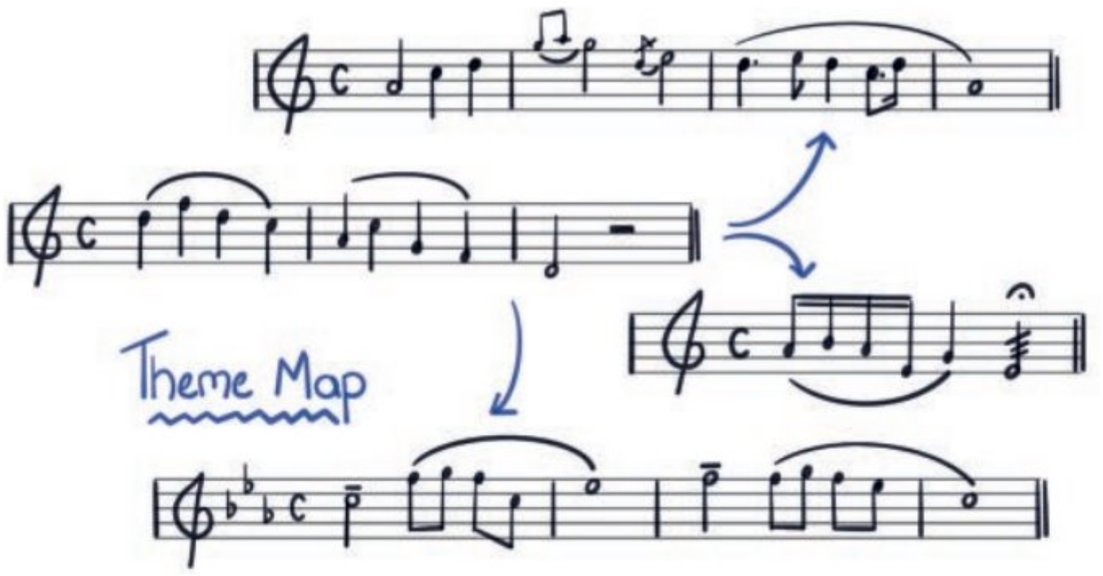


■ **Figure 10.42** Tchaikovsky's motifs outlined in three groups, mm1-2, mm3-4, mm5-7

What is motivic development?

ADVENTURE MUSIC (PART 1)

The *Kung Fu Panda* trilogy from Dreamworks (2008, 2011, 2016) is an incredible example of storytelling and 21st Century scoring techniques. It brings together tradition and imagination. Composers Hans Zimmer and John Powell presented creative and distinct themes that, through the process of motivic development and development, connected together like a modern era opera.



■ **Figure 10.43** Theme map of transcribed motifs from *Kung Fu Panda 1, 2 and 3.* Can you sing or identify them?

John Powell (b. 1963) is the composer for the film trilogy *How to Train Your Dragon*. His themes have moved countless audiences, as they tell the tale of Hiccup and his dragon Toothless. For the next three sections we will focus on a different aspect from each film, looking to identify a structure, or an insight, into how Powell composed for these films.

We will investigate his music through a three-step process of **a** play, **b** creating and **c** orchestrating. It will then be up to you to keep a log of your learning experiences, to show what you have experimented with.

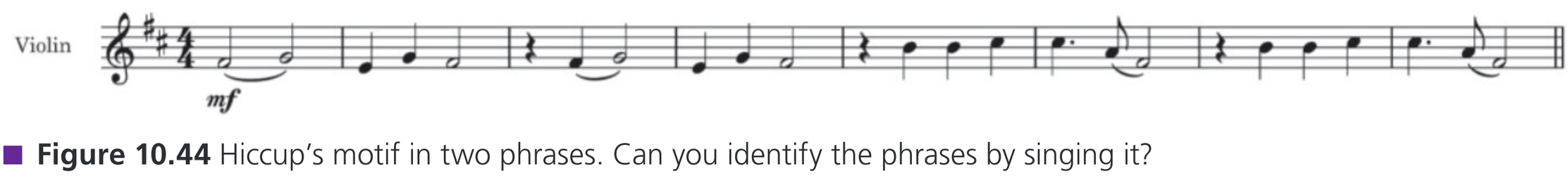
> *"Music does half of the storytelling," says writer-director Dean DeBlois, "and in the case of John Powell, a storyteller in his own right, he is a partner from the beginning. He finds themes that I might not even be consciously aware of and brings them to the surface."*

WHAT MAKES YOU SAY THAT?

Listen to the tracks 'Hero', 'Sacred Pool of Tears' and 'Ancient China' to complete the following brainstorming activity:

1. **In groups, create a large-scale mind-map called 'Themes of Kung Fu Panda'.**
2. **Using the notated themes of Figure 10.43 listen and document each repetition you hear.**
3. **Whenever a theme is presented, identify whether it has been transformed through motivic development.**
4. **Finally, add your own description of the themes as they are performed. Which instrumental colours perform them?**

Learning to **identify** aurally and describe how themes / motifs are used is the beginning of writing great music.



■ **Figure 10.44** Hiccup's motif in two phrases. Can you identify the phrases by singing it?

! Take action

- ! Find out how to identify, develop and build musical ideas that communicate emotion or a narrative.
- ! Explore the progression of compositional techniques and devices in contemporary film-scoring. Examine string quartets to see how they structure musical themes to integrate them into your own practice.
- ! Create your own school podcast series that reviews contemporary streaming media from Netflix to iTunes and Spotify for your community. Within this podcast create, poll, interview and analyse the animation, music and cinematography that you find inspiring.
- ! Two examples are *Soundtracking with Edith Bowman* (**https://podcasts.apple.com/au/podcast/soundtracking-with-edith-bowman/id1140497332**) and *Settling the Score* (**www.settlingthescorepodcast.com**).
- ! You can also use the platform to showcase your own example film-scoring projects.

ACTIVITY: How to compose for dragons (part 1)

ATL

- Media literacy skills: Locating, organising, analysing, evaluating, synthesising and ethically using information from a variety of sources and media

1 **'This is Berk'**
One of the first themes to come to mind is that of an island called Berk. The bassoon plays a 6/8 melody that moves in 4 phrases, accompanied by chords F minor (i)-B♭ (IV) see-sawing between each other in the harp and choir.
What makes this theme so enjoyable is partly its time signature, but also how many times we hear it repeated with different orchestral colours. The strings provide the rhythm and a high 'c' pedal but they will take over the melody as the theme develops.

'Play and Recreate'

***Play and then recreate* Figure 10.45 inside a notation program that you prefer. However, make sure you set the melody and chords into the string section of violins 1 and 2, viola and cello.**
Which string techniques will you test out?

2 **'Test Drive' ostinato**
As you have noticed, we like repetition; and Powell's music does a lot of it! Interestingly, his patterns and themes do not become boring or monotonous. *How does he do this?*
If we take the excerpts from 'Test Drive' in Figure 10.46 and listen to them on the playlist, the *ostinato* and *main theme* are presented in different orchestral colours; first, in brass and strings and then by a quieter arrangement with soprano whistle. What unifies the two pattens is Powell's use of a bass line 'D' ostinato. It gives us a feeling of unity, strengthening the melodies that Powell wants us to hear.

'Play and Orchestrate'

***Play* and then *orchestrate* the ostinato for 'Test Drive' or Hiccup's theme, but this time limit yourself to the cello and harp for the first 4 measures and then bring in the strings section for the last 4 measures. Experiment and share your creation with a friend for peer feedback.**

Hint

You can make edits and use the string quartets studied throughout the chapter for ideas.

Assessment opportunities
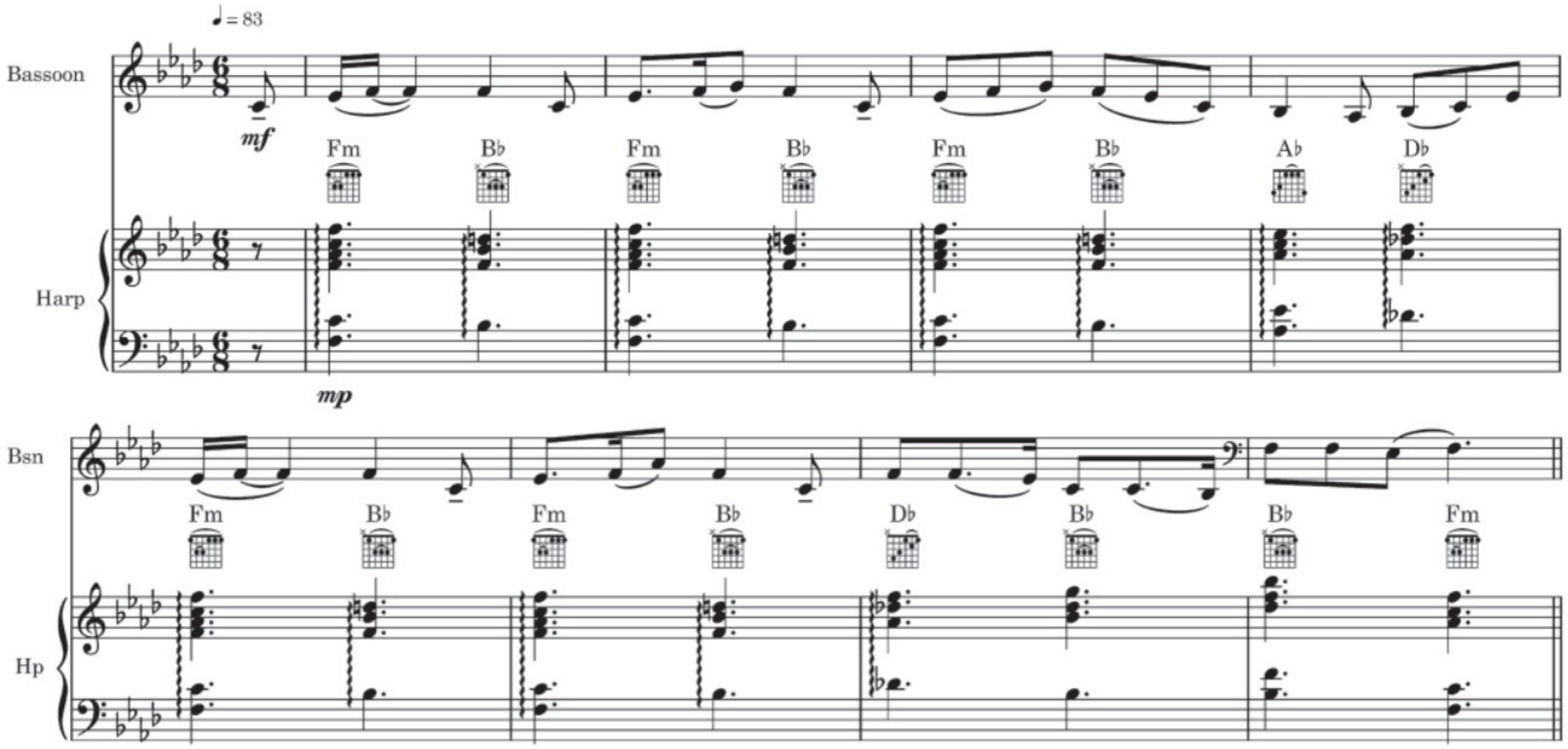
In this activity you have practised skills that are assessed using Criterion A: Knowing and understanding and Criterion B: Developing skills.

Portfolio presentation

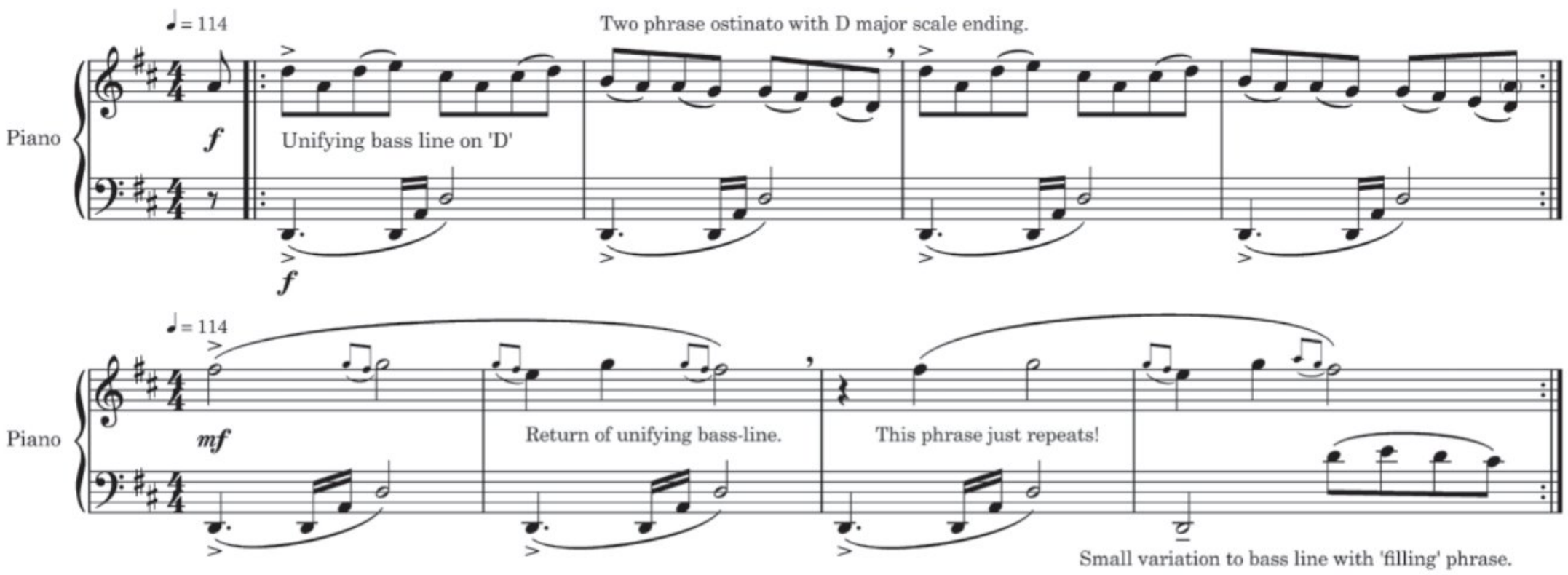
Orchestration tips No. 7

Heitor Villa-Lobos (1887–1959) was a Brazilian composer and a highly significant figure for contemporary Brazilian music. His 'String Quartet No. 5 Quarteto popular no. 1', written in 1931, begins with unison pulses for 4 measures before layering a series of scales, with the pulse, and a new 4-measure descending melody using something called a **tetrachord**.
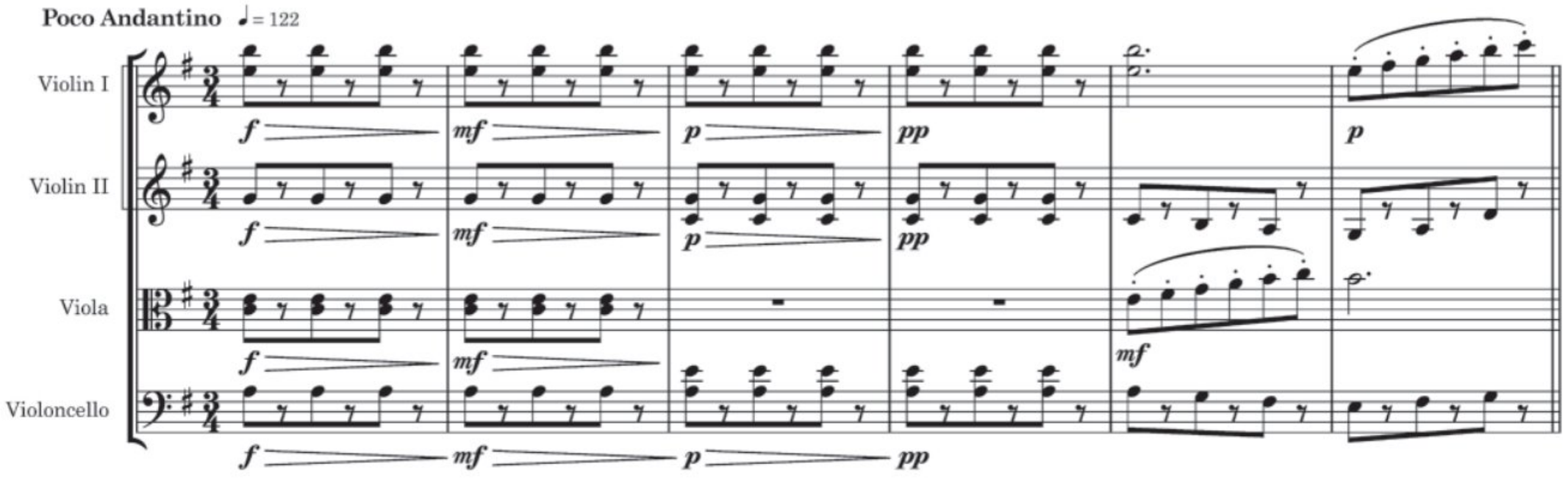
Underneath the sustained 4 measures of melody, the other instruments play a series of sequenced phrases that descend by one step each measure. It is simple and yet clear writing that you too can build on. Listen to the playlist or watch a video with the score here:
https://youtu.be/zR0BFCWgtB0



■ **Figure 10.45** 'This is Berk'



■ **Figure 10.46** 'Test Drive' excerpts, with a tonic pedal in each measure. Transcribed for performance in D major.



■ **Figure 10.47** Villa-Lobos string quartet opening in rhythmic unison and then alternating scale patterns

Are film scores the new 'art music'?

ADVENTURE MUSIC (PART 2)

How to Train Your Dragon 2 is a masterpiece that builds on the themes from the first film, adding new colouring and orchestration. The following activity focuses primarily on the thematic material of two new characters, and how Powell orchestrates their skeleton structures (a new technique to document)!

ACTIVITY: How to compose for dragons (part 2)

ATL

- Communication skills: Collaborating with peers and experts using a variety of digital environments and media

1 Meet Drago

Drago is the villain of the second film. As such, his theme incorporates chromatic notes and a colouring of register (where the notes are played) in the male choir, strings and brass. The first two phrases in Figure 10.49 are sequences in 4/4, while the last two phrases are also sequences but now in groups of 3 (using triplets). As you listen to the track on the playlist, can you identify a change in scale or mode?

***Sing* this melody. Then, *record* several layers of your voice, a friend's and your teacher's, all singing this phrase into a program like GarageBand or SoundTrap. Your aim is to create a dark, low-register vocal version on an open syllable such as 'ahh'. Feel free to add double bass and cello to reinforce the texture.**

2 Flying with Mother

This track is a beautiful addition to writing music in groups of 3! Throughout this activity you can review the score from John Powell's own YouTube channel here: https://youtu.be/Z4tzp0EUWSE?t=1

Music exploration: Arpeggios and subdivisions

Two common features will stand out to you in string-writing and film scores: arpeggios and the art of **subdividing** a beat. When layering melodies or creating beautiful harmonies, the arpeggio works even better when paired with different rhythms.

In the example below, there are two main chords, C minor and Ab major ascending in triplets. The pulse of 4/4 can still be felt with each grouping of 3, but the focus is on the arpeggios. When the accompaniment shifts its rhythm, a new theme is identified. A repetitive 4-note motif works to connect changes in harmony by using **chord tones** of the triads C minor-A♭ major-B♭ major-F minor.

Listen to 'Inner Peace' on the playlist and try these techniques yourself.
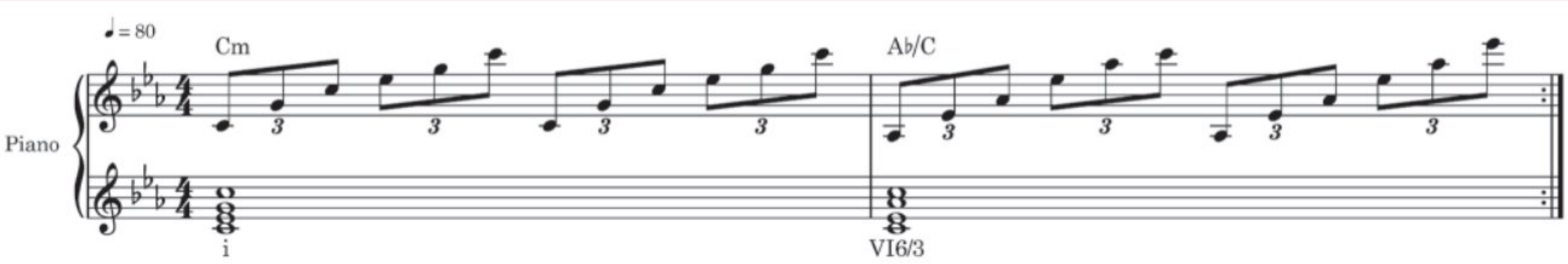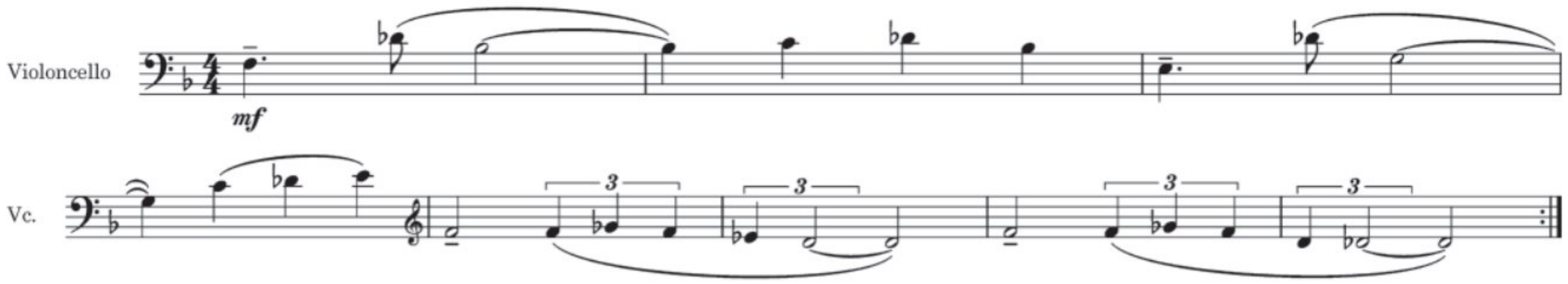


Figure 10.48 'Inner Peace' arpeggio from *Kung Fu Panda 2*

Valka's theme builds on the phrasing and arpeggio structure of the track 'This is Berk'.
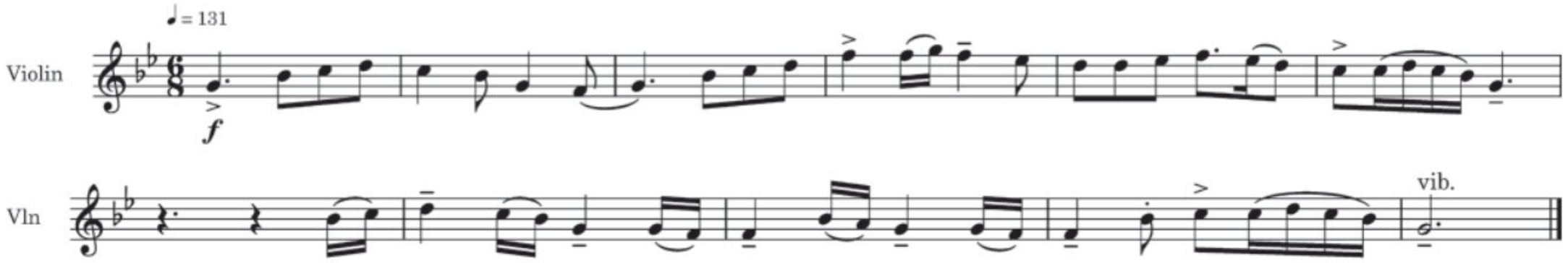
Play **the theme as notated in Figure 10.50 and copy it into your portfolio. Can you identify the fragmentation Powell uses towards the end of the theme? He centres the melody around the note 'G' and sticks mostly to a range of an octave. Using this as your model,** ***create*** **your own theme in 2 clear phrases, for a 'lady who flies with dragons'.**

Assessment opportunities

In this activity you have practised skills that are assessed using Criterion C: Thinking creatively and Criterion D: Responding.



■ **Figure 10.49** Drago's theme as a 'skeleton' structure



■ **Figure 10.50** Valka's theme as a 'skeleton' structure

Portfolio presentation

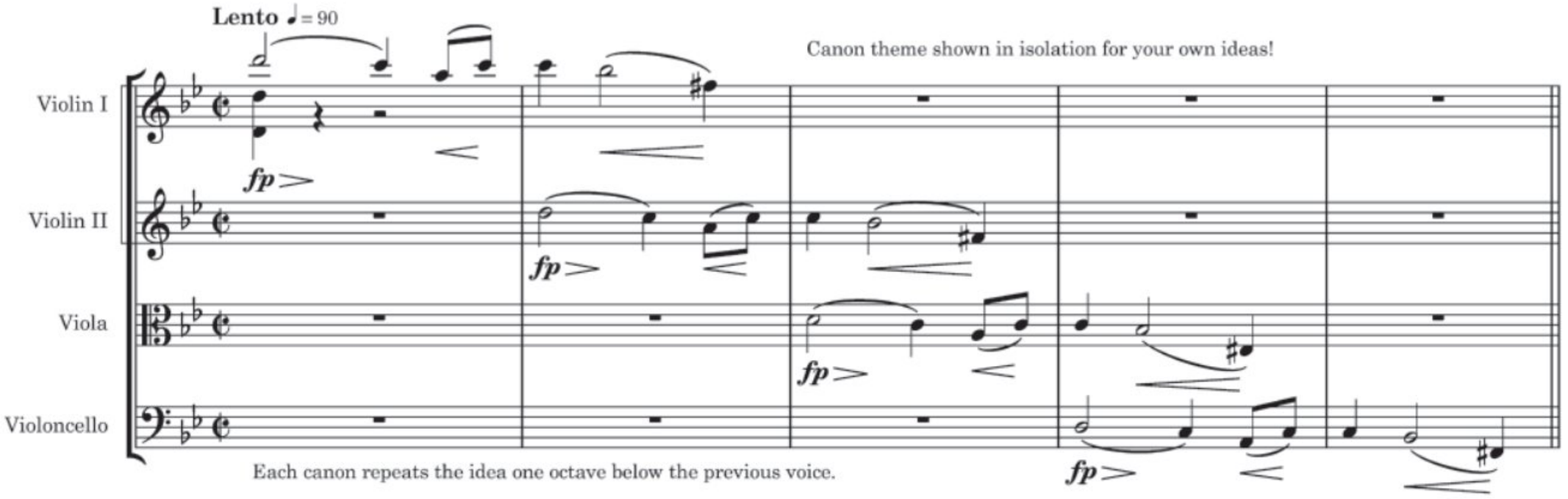
Orchestration tips no. 8

Composer Edvard Grieg (1843–1907) wrote his *String Quartet No. 1 in G minor, Op. 27* between 1877 and 1878. We are focusing on the fourth movement, entitled 'Finale. Lento – Presto al Saltarello' because of two main features.

First, the work begins using a device called a **canon,** where each part enters with the same opening line. In this quartet, all the instruments (violin, viola and cello) enter with the same note 'D' transposed one octave lower.

Secondly, once the canon entry is completed, the work changes to a 6/8 time signature emphasising rhythmic groups of 3.

Listen to the playlist or watch a video with the score here: **https://youtu.be/OM9hdCpdcqc?t=1470**



■ **Figure 10.51** Grieg's first theme in canon

Is the repetition of a leitmotif still poignant in film?

ADVENTURE MUSIC (PART 3)

How to Train Your Dragon 3: The Hidden World expertly crafted another score that brought back older themes and combined them with new ones. John Powell used motivic development, harmonic colouring and orchestration to differentiate the journeys the characters had made through the course of the films.

> *"I brought all the [earlier] themes back but in newer versions," Powell explains. "Then I used them very carefully. If I had kept using material that everybody knew all the way through the movie, you wouldn't have felt it as significantly as you do at the end."*
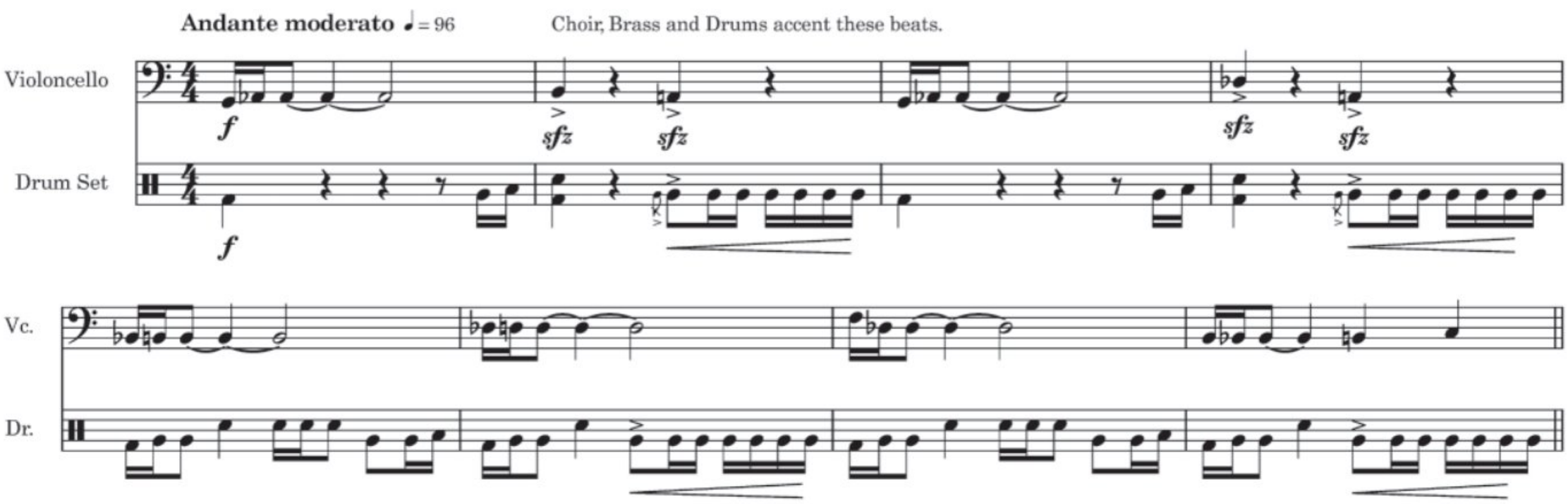
Visually you may be able to identify the techniques of development used to create the villian Grimmel's theme, in Figure 10.52. By repeating a small rhythmic motif, Powell has shifted or transposed this motif with chromatic alterations and texture changes in the choir, brass and drums.

Play through the theme while listening to the track on the playlist. What do you notice about the chromatic notes? How many instruments are playing them? Using other instruments to *double* or *reinforce* your themes is a solid element of Powell's orchestration.

Like Powell did with Grimmel, create your own 'villain' theme with **a** a small rhythmic motif by **b** transposing it up and down with chromatic alterations. You can notate, record and then double it with different instruments or voices.

Repeating this type of exercise is how composers come up with creative ideas!

> *"Unusual instrumental colours helped to convey the ancient world and its mythical denizens. Powell used Celtic harp, bodhrán frame drum, uilleann pipes, traditional Scottish bagpipes and, most uniquely, the voice of Icelandic singer Jónsi (of the post-rock band Sigur Rós) as the basis for the music of the dragons' long-lost lair."*



■ **Figure 10.52** Grimmel's introduction, arranged for school group performance

ACTIVITY: How to compose for dragons (part 3)

ATL

- Creative thinking skills: Using brainstorming and visual diagrams to generate new ideas and inquiries

Listen to 'The Hidden World' on the playlist around the 2'20 mark. It is an incredible melody that begins in G minor with an interval leap, then is written in such a way that it comes across as heroic, pure and magical. This is mainly due to the **Dorian** modal sound Powell is utilising.

Play Figure 10.55 on your instrument or device. Then **use** your knowledge from our previous studies to complete the tasks that follow:

1. **Using the acronym of IDEA, create a listening map of the track 'The Hidden World'. Look to identify the theme below, but also rhythmic patterns, arpeggios, motivic development and orchestration ideas.**
2. **Create a template in notation software for a string quartet (violin 1 and 2, viola and cello). Set the key signature to G minor (2 flats) and copy the melody into violin 2. Then double the melody an octave higher for violin 1.**
3. **Create a series of arpeggios for the viola and cello to share, using the bass as a guide in C minor.**
4. **Now use the techniques of motivic development to transform what you have notated and make it your own creation.**

At each step above, spend time listening and mapping out ideas. Always play your instrument or device, experimenting with the notes and chords. Sometimes recording your ideas into GarageBand is a great way to test different layers.

Assessment opportunities

In this activity you have practised skills that are assessed using Criterion C: Thinking creatively and Criterion D: Responding.

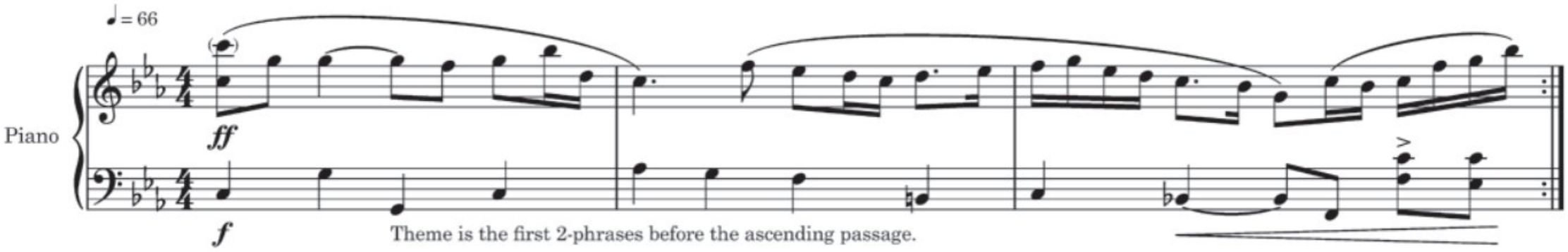


Figure 10.53 'The Hidden World'

SEE–THINK–WONDER

String quartets have been an excellent way to investigate the techniques of motivic development, harmonic colouring and orchestration. Now compare this to a score composed by Nicholas Britell (b. 1980) for the 2016 film *Moonlight*. The score has three distinct themes that are chopped and sampled: **www.vulture.com/2017/02/song-exploder-inside-moonlights-score.html**. Listen to the NPR interview with Nicholas Britell at **www.npr.org/2017/02/20/516292253/song-exploder-moonlight-composer-describes-process** and write your responses to the prompts below.

1. **What did you hear? What did you understand?**
2. **What do you think about the techniques used by the composer?**
3. **What does it make you wonder about the music you could create?**



Figure 10.54
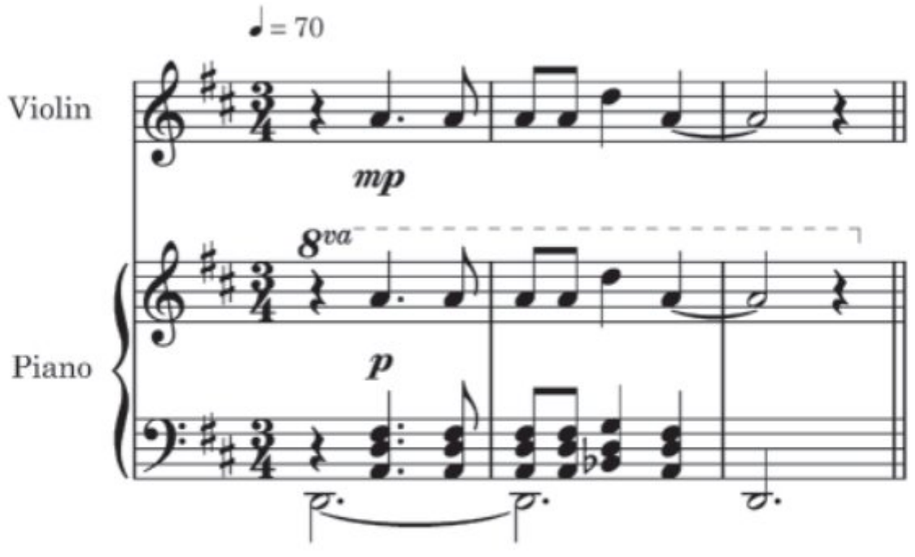


Figure 10.55 Motif based on D major (I) to G minor (iv)

How do we recognise ‘the imagination’ in creative works?



■ **Figure 10.56**

Reflection

In this chapter we have **explored** works from string quartets to modern film scores. By breaking down these scores and their recordings into smaller parts, we have *defined* or revealed their features in detailed *analysis*. Additionally, each of the string writing examples may have opened up a world of structural *comparisons* to spark further imaginative creations. Think back on each work studied and you will discover that music is organised and it has colour and pattern. But imaginative artists can craft a different response each time.

SOME SUMMATIVE OPTIONS TO TRY

Use these ideas to apply and extend your learning from this chapter. These problems can be assessed using any of the strands suggested above the summative activities. The presentation and portfolio requirements are given after the description.

THIS TASK CAN BE USED TO EVALUATE YOUR LEARNING IN CRITERION A AND CRITERION D (ALL STRANDS).

SUMMATIVE 1

In this task you are a reporter **developing** a film-score podcast that **explores** and builds on the examples **presented** in this chapter. You are to investigate, research, play and record selections from your favourite films or composers, **using** a program such as GarageBand or SoundTrap to edit and present three episodes.

Presentation and portfolio

Use your portfolio to document each and every theme you uncover from the composer / film, then mark the uses of motivic development, harmonic colouring and orchestration. This will help you structure your discussion when recording the podcast.



■ **Figure 10.57**

THIS TASK CAN BE USED TO EVALUATE YOUR LEARNING IN CRITERION A, CRITERION B AND CRITERION C (ALL STRANDS).

SUMMATIVE 2

Choose a short scene from one of your favourite films or animations. Then, **using** the examples provided throughout this chapter, sketch a series of motifs showing different examples of how you:

1. **coloured them with different harmonies, and / or**
2. **orchestrated them for different instruments and sound sources.**

Even if you don't get to score the music for the chosen clip, having a sketchbook of ideas that you have played, **created** and experimented with is the ultimate goal.

> *"A painter friend of mine… once brought me into his studio, and he was setting up all these jars of pigments and colors. I asked him what he was doing and he said, '… I don't start painting until I've settled on exactly what tones and pigments and colors [I'm using ...] When it is completely done, I'll start my first picture.' I thought to myself, 'that is exactly what I'm doing when I start a film.' I'm laying out all my melodic pieces, knowing in my head how it is all going to work together."*
>
> *Danny Elfman*

Presentation and portfolio

Watch your chosen clip several times to create markers or note down specific timings where you want to add a theme, **develop** a phrase or change the texture. If you have software such as GarageBand that allows you to score to video, you can then record your own music over the chosen clip. If not, **use** notation programs to record your music using the timings as your guide. Your final presentation is to showcase your finished work to your class for feedback.

Portfolio presentation

Documenting and sharing

Keeping in line with all the activities, ideas and explorations opposite, use the concepts discussed in this chapter to compose for school tasks, service and action activities or community projects. Your investigations will have heightened your listening skills and filled out your portfolios. Keep playing the ideas that come to you and make regular efforts to record or orchestrate them on manuscript, as well as with technology.

Use this table to reflect on your own learning in this chapter.

Questions we asked	Answers we found	Any further questions now?
Factual: Who was Bernard Herrmann? What is musical texture? What is motivic development? What is idiomatic orchestration? What is harmonic colouring?		
Conceptual: How do we recognise 'the imagination' in creative works? How is rhythm used to layer phrases and harmonic colours? How do composers restructure their work to identify with emotion(s)? How can a melody or rhythm be reinterpreted for storytelling?		
Debatable: Are film scores the new 'art music'? Is the repetition of a leitmotif still poignant in film?		

Approaches to learning you used in this chapter:	Description – what new skills did you learn?	How well did you master the skills?			
		Novice	Learner	Practitioner	Expert
Communication skills					
Affective skills					
Media literacy skills					
Creative thinking skills					
Transfer skills					
Learner profile attribute	Reflect on the importance of communication for our learning in this chapter.				
Communicators					

11 How do schools of thought shape art?

Transformation through time overlaps with **personal** ideas and a drive to push **boundaries**.



■ **Figure 11.1**

CONSIDER THESE QUESTIONS:

Factual: What are the Mannheim and Viennese schools? What is a 12-tone matrix? What is the Russian school of music? What is *Klangfarbenmelodie*?

Conceptual: How did the 20th Century establish change in the world of music? Which innovations in music can lead to new schools of thought? How can we explore elements of sound production? How does motivic development contribute to the DNA of an artist's style? How is change reflected within artistic expression?

Debatable: Is change in music inevitable? How might reliance upon a structure provide artistic freedom? Is the future school of music a global blend of tradition and modernism?

Now **share and compare** your thoughts and ideas with your partner, or with the whole class.

IN THIS CHAPTER, WE WILL…

- **Find out** how music has changed, transformed, moved and been expressed around the world in different contexts and centuries.
- **Explore** techniques of expression that give rise to new ideas and sounds, including new forms of stimuli and the effect this has on the world.
- **Take action** by assuming the role of a time traveller or artist that is asked to present on their 'new' music; develop an original approach that builds on the ideas of the past, and extends into what we will call the *musical school of energy and expression*.

These Approaches to Learning (ATL) skills will be useful…

- Communication skills
- Collaboration skills
- Organisation skills
- Reflection skills
- Creative thinking skills

Assessment opportunities in this chapter:

- Criterion A: Knowing and understanding
- Criterion B: Developing skills
- Criterion C: Thinking creatively
- Criterion D: Responding

We will reflect on this learner profile attribute…

- Inquirers: We nurture our curiosity, developing skills for inquiry and research. We know how to learn independently and with others. We learn with enthusiasm and sustain our love of learning throughout life.

Prior knowledge

This chapter works on the premise of including all levels of learners. You will find it useful to know:

- how to play and work with scales, modes, chords, bass lines, riffs, rhythms and ostinatos; the next step will be how you compare and then contrast these to other works you may know
- how to work collaboratively to express musical ideas with, voice, instruments and technology that includes recording and performing live
- what working within an ensemble means for balance and intonation, but also communication and expression
- ways of analysing music using pitch, duration, texture, structure, tone-colour, dynamics and expressive techniques to document the fingerprints of a style or artist / composer
- how to present musical ideas from research and analytical listening; this includes reading from scores and annotating examples.

Examples, links and referenced materials will guide you further.

KEY WORDS

melody
harmony
motif
pitch cell
Mannheim Rocket
doubling
extended techniques
transposition
12-tone row
matrix
atonal
variation
rondo
retrograde
inversion
fragmentation
sequence
augmentation
diminution

Links to: History; Dance; Theatre

History has a large role to play in this chapter. You can work with your teachers to use over-arching topics such as revolutions, societies in transition and investigations into cultural discoveries that, for better or worse, brought about societal change. Dance and Theatre will be able to connect on pushing boundaries in both physical and written works, adapting the musical terms and examples to their own plays, monologues and choreography. There is a direct relationship between how a dancer or actor would block, move, and transform their movements in ways exemplified by the musicians in this chapter.

"Everything has been composed, just not yet written down."

Mozart

From the music of the Mannheim school, which was a group of German composers around the mid-18th Century, and the first and second Viennese schools of the 18th then 20th Centuries, to the Russian school of the 19th Century and what could now be considered a Global School of Music, the process of creating and performing has seen many changes. Alongside each change of century, certain personalities have arisen as dominant voices. Now, in the age of streaming playlists, an essential question arises around how schools of thought have shaped the artistic expression of our time.

"Stormzy should be taught in schools instead of Mozart to prevent exclusion"

National charity Youth Music

THINK–PAIR–SHARE

Michael Omari (b. 1993), better known as Stormzy, is a successful musician of our time. Winner of Best Urban Video 2019, Stormzy has been highlighted as a new and relevant voice to replace the study of Wolfgang Amadeus Mozart (1756–1791). As a class, read this article, then hold a discussion **using** the points that follow: **www.classicfm.com/music-news/could-stormzy-replace-mozart-music-curriculum**. Stormzy's track 'Crown' is in the playlist as an example for your discussion.

1 a **What does the headline of the article suggest?**
 b **In your opinion, what is the foundation of Stormzy's style?**
 c **What is unique about Stormzy's approach to performance?**
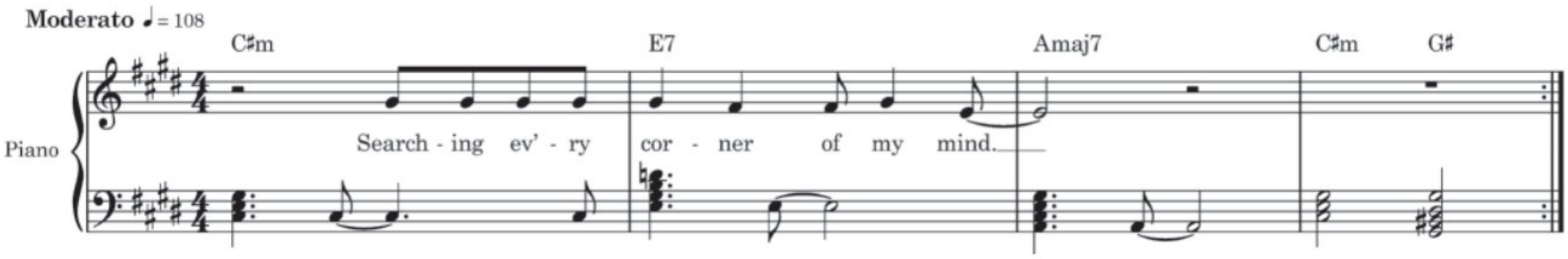
The article above is suggesting that a new curriculum is required in our new school age; a curriculum that involves people, the music they are passionate about and the music that they want to make. Consider the following points and write down your initial thoughts:

2 a **Is music created to involve people across cultural / social boundaries?**
 b **Is music a language that anyone can learn?**
 c **Could Mozart have been the 'Stormzy' of his time?**

Mozart was a composer and performer, but also a teacher. As such, he had a unique approach to educating his pupils in his creative process. You should be familiar with this approach because it has been included in the activities **presented** in this book.

> *"Mozart [would create] by thinking through the outline of the entire work in advance, drafting a skeleton score, and then filling in the missing details and elaborating [on] them…"*

Turn to a partner to share your thoughts on Mozart's approach. Would this style of learning allow you to **create** the music that you are passionate about?



■ **Figure 11.2** 'Crown' chord progression and phrasing

Music exploration: Classical, trap, funk or neo-soul?

Music can be boiled down to a simple combination of *rhythm*, *line* and *colour*. But from our investigations throughout this book, the creative process can include so much more. The genre known as *neo-soul* is a combination of styles that crosses into new boundaries that isn't quite EDM (electronic dance music) and not quite hip-hop. Anomalie (Nicolas Dupuis) is a classical and jazz-trained keyboardist who produces a new style that quite literally transcends boundaries. Read more at Ableton.com here: **www.ableton.com/en/blog/anomalie-keys-chords-and-beats**

> *"Anomalie effortlessly blends elements of trap, hip hop, funk, jazz and classical music to create gorgeous works of art."*
>
> *YourEDM*



■ **Figure 11.3** *Métropole* by Anomalie



■ **Figure 11.5** Anomalie

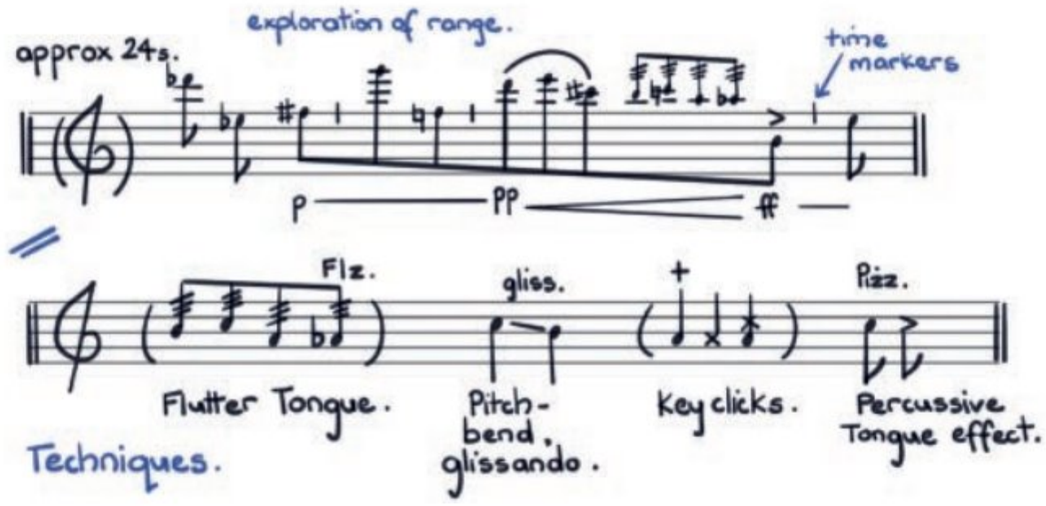
Portfolio presentation

Experimenting with Berio No. 1

Luciano Berio (1925–2003) was an outstanding composer of the 20th Century. Berio's works will serve as models of inspiration for exploring solo instrumental colours. These works, called *sequenzas*, will outline extended playing techniques for instruments, often referred to as *idiomatic scoring techniques*. *Sequenza No. 1 for Solo Flute* (1958) is the first work we will examine. Listen to the track on the playlist and observe Berio's use of serialism to compose.

1 There is no meter. The performance is clearly directed both by the composer, with his groups of phrases, and the artist, who interprets the piece.

2 The use of techniques called *flutter tongue* and *key clacking* introduce elements of new rhythmic and textural variation. They sound exciting, still outline **scales** and are used as section changes in the piece.
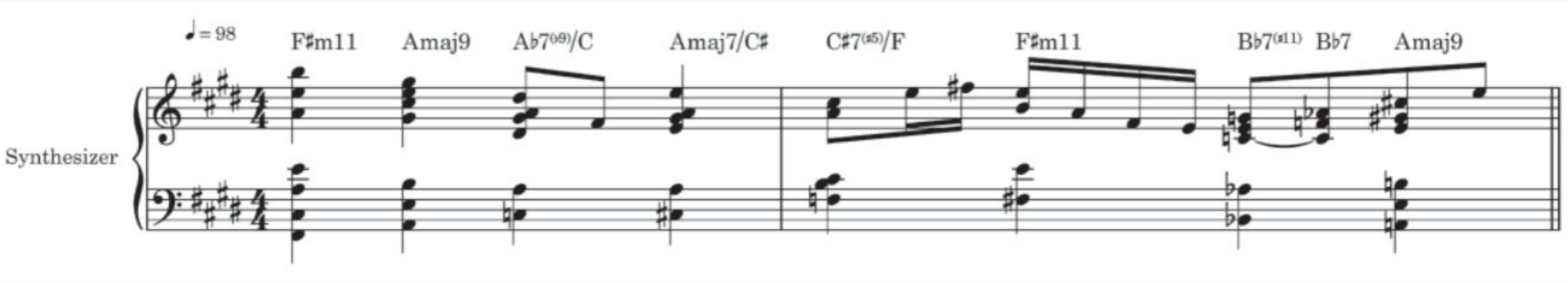


■ **Figure 11.6** Berio *Flute Sequenza I* transcribed ideas

Research more extended flute techniques using this resource: **www.flutexpansions.com/videos** and any others you find online. Pick three techniques you can work into a composition of your own, and copy them into your portfolio for future tasks.

Listen to the Soundslice link at **www.soundslice.com/slices/YjDcc/course-preview-882** and go over the three excerpts from Dupuis' album *Métropole*. By narrowing our focus onto three key components, we can refine our research into schools of thought by examining:

1 the rhythm and melodic phrasing
2 the harmonic **progression**
3 the use of both electronic and acoustic sound sources.

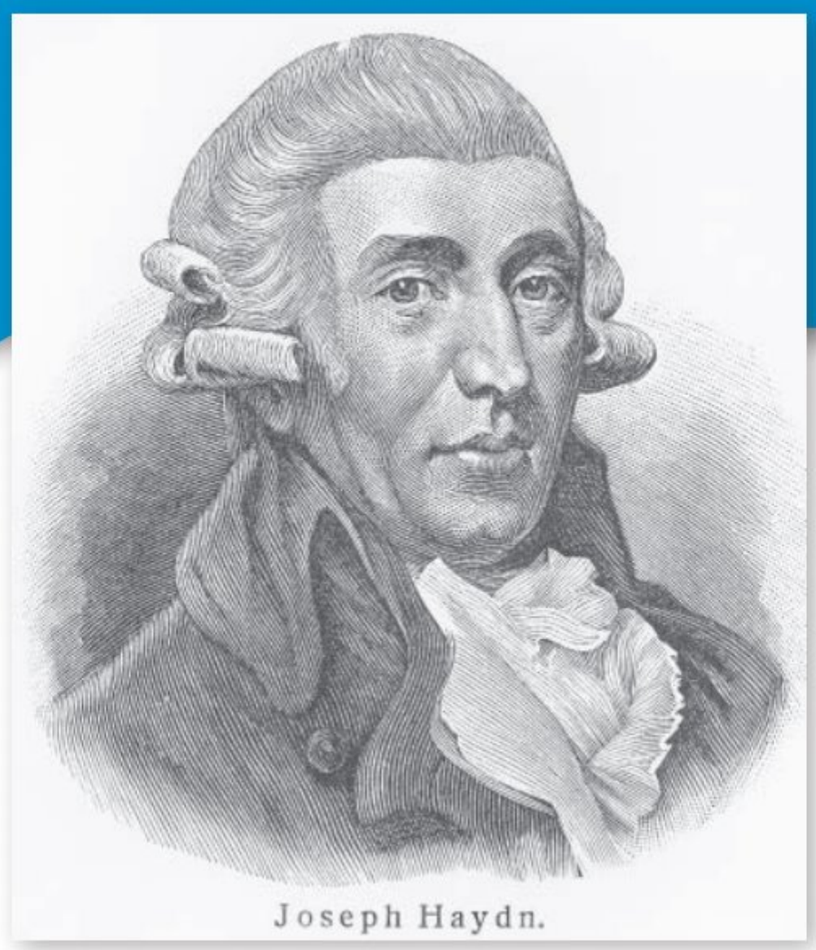
Copy the examples with the annotations into your portfolio. You can listen to Anomolie's entire album on Soundcloud at **https://soundcloud.com/anomaliebeats/sets/metropole-ep** for future research.



■ **Figure 11.4** *Métropole* example. Look at the rate of harmonic change in these two measures, as well as the extended harmony.

What are the Mannheim and Viennese schools?

MANNHEIM, HAYDN AND PROKOFIEV?



■ **Figure 11.7**
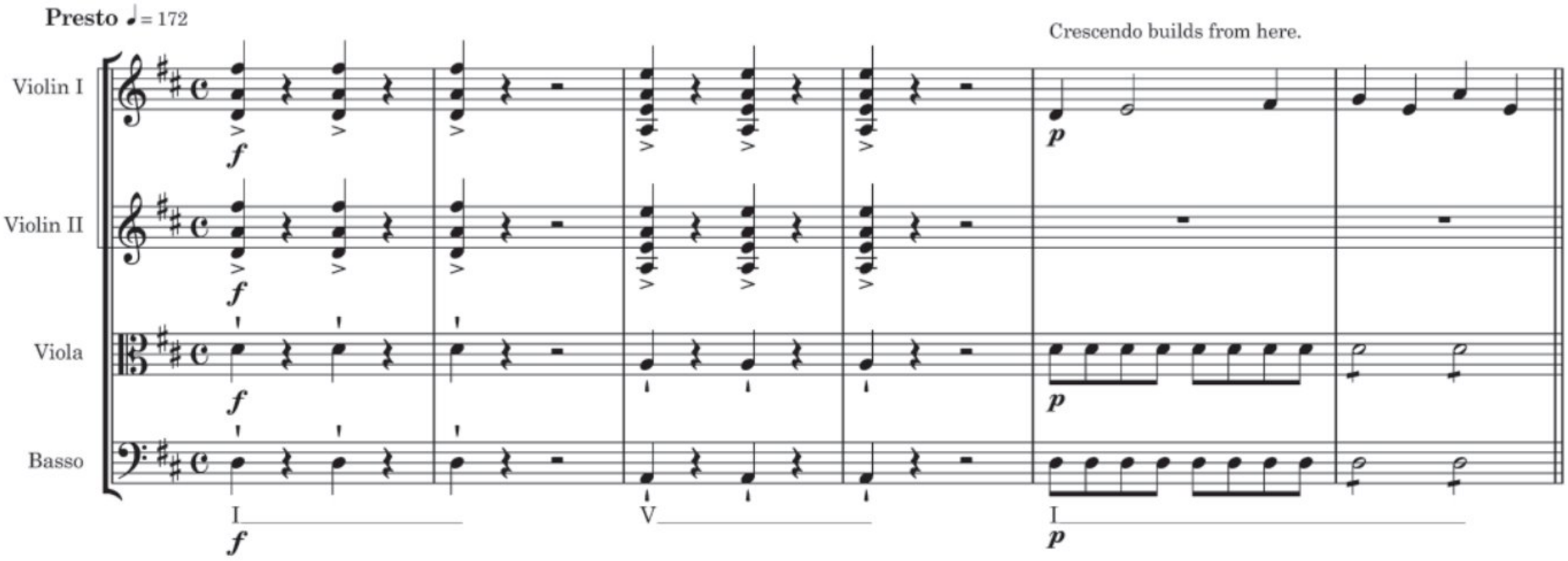
> *"It [was like] an army of generals, equally competent to plan a campaign and to fight it."*
>
> *Description of the Mannheim school of music*

The Mannheim world must have been one of excitement in the 18th Century (1743–1778) because writers have commented that to have heard the orchestra of patron Karl Theodor von Sulzbach in Mannheim (Germany) was quite an experience. Concert goers of the time remarked that it was as if they had been "transported to a magic island of sound." Just imagine them being here today!

Changes in how music was expressed emerged under the directorship of Johann Stamitz (1717–1757). Wind players were treated as equal colours in the orchestra, the clarinet was added to the ensemble and dynamic changes showed more contrast, unlike the terraced dynamics of the Baroque era.

The first **movement** of 'Symphony in D major, Op. 3, No. 2' by Johann Stamitz contains three new musical features that became associated with performances by the Mannheim Orchestra. These are not new to us; however, they are still relevant, and technology has only made them that much more expressive. You can listen to the work on YouTube with score: **https://youtu.be/fh8-6mpZAxw**

1. **Mannheim Hammer Blows**: In unison and / or in octaves, this is an **orchestration** device that originated in early Italian symphonies.
2. **The Mannheim Steamroller**: This begins softly with strings and horns over a pulsating bass line, gradually building to a fortissimo outburst by the full orchestra.
3. **The Mannheim Rocket**: A swift upward **arpeggio** or scale that rises through several octaves and is combined with a crescendo.
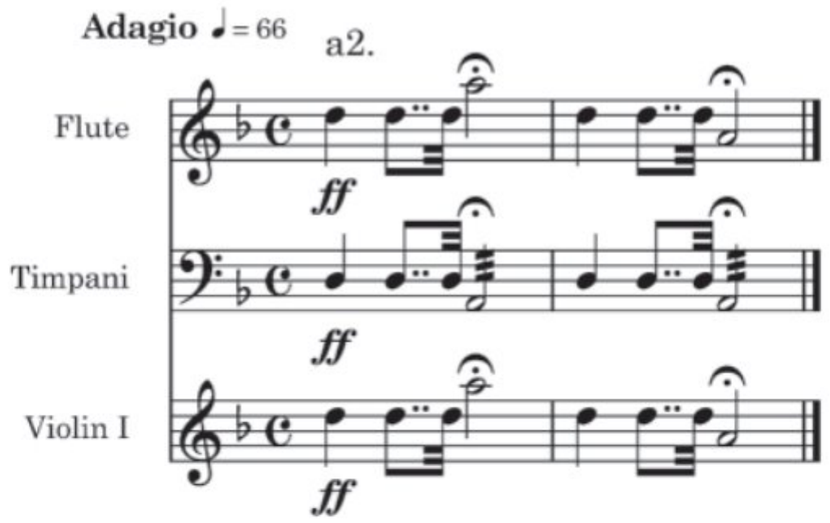


■ **Figure 11.8** Stamitz *Symphony in D* showing opening hammer blows

The works of Franz Joseph Haydn (1732–1809) embody everything we now refer to as the *style* and *technique* of the First Viennese school. There was no physical building or institute; instead, Vienna and its artists were under the patronage of the Hapsburg family empire in the 18th Century. It is in this environment that Haydn, Mozart, Beethoven and later Schubert **developed** their musical ideas. Haydn spent much of his life in the service of the Esterházy family at their palace in Eisenstadt:
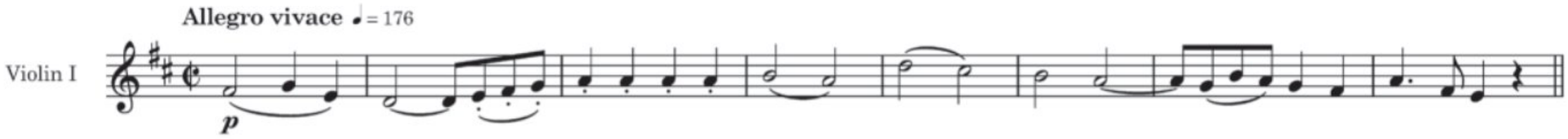
> *"My prince was always satisfied with my works. Not only did I have the encouragement of constant approval, but as conductor of an orchestra I could make experiments, observe what produced an effect… and be as bold as I pleased."*
>
> *Haydn*

His influence on the development of what we now call *classical* music was a result of his time experimenting with the orchestra as a complete instrument rather than just accompaniment to a given melody. Haydn moved to London in 1791, and it was here that he wrote the symphonic masterworks known as the London Symphonies. Listen to his 'Symphony No. 104 (London)' and make a sketch (a schematic) in your portfolio of the first movement. The opening **motif** and then the main theme are given below in Figures 11.9 and 11.10.

From your listening and sketching you should notice that nearly all of the melodic ideas in this movement *are derived from the main theme*. Best of all, the entire orchestra gets to play the melodic theme in different ways throughout the first movement.



■ **Figure 11.9** Haydn's D minor opening motif in flute, violin and timpani (with rolls)



■ **Figure 11.10** Haydn's main theme heard in the exposition for violin 1

ACTIVITY: The London Symphonies

■ ATL

■ Creative thinking skills: Applying existing knowledge to generate new ideas, products or processes

Haydn opens his symphony with a fantastically simple motif on D (Figure 11.9). With your instruments, or other devices, **create** as many different versions of this motif that you can imagine. Some suggestions are: **a** make the **intervals** smaller, **b** add intervals in between, **c** change the **rhythm**, **d** play it backwards, **e** fragment and repeat one measure, **f** add different **chords** to the motif, and so on.

Make sure you document and write down each idea you come up with.

◆ Assessment opportunities

In this activity you have practised skills that are assessed using Criterion A: Knowing and understanding and Criterion C: Thinking creatively.

QUESTION STARTS

Listen to this work on the playlist and copy the notated examples into your portfolio. Next, listen to the opening of Prokofiev's *Classical Symphony in D Major* and see if you can **identify** the same three musical features.
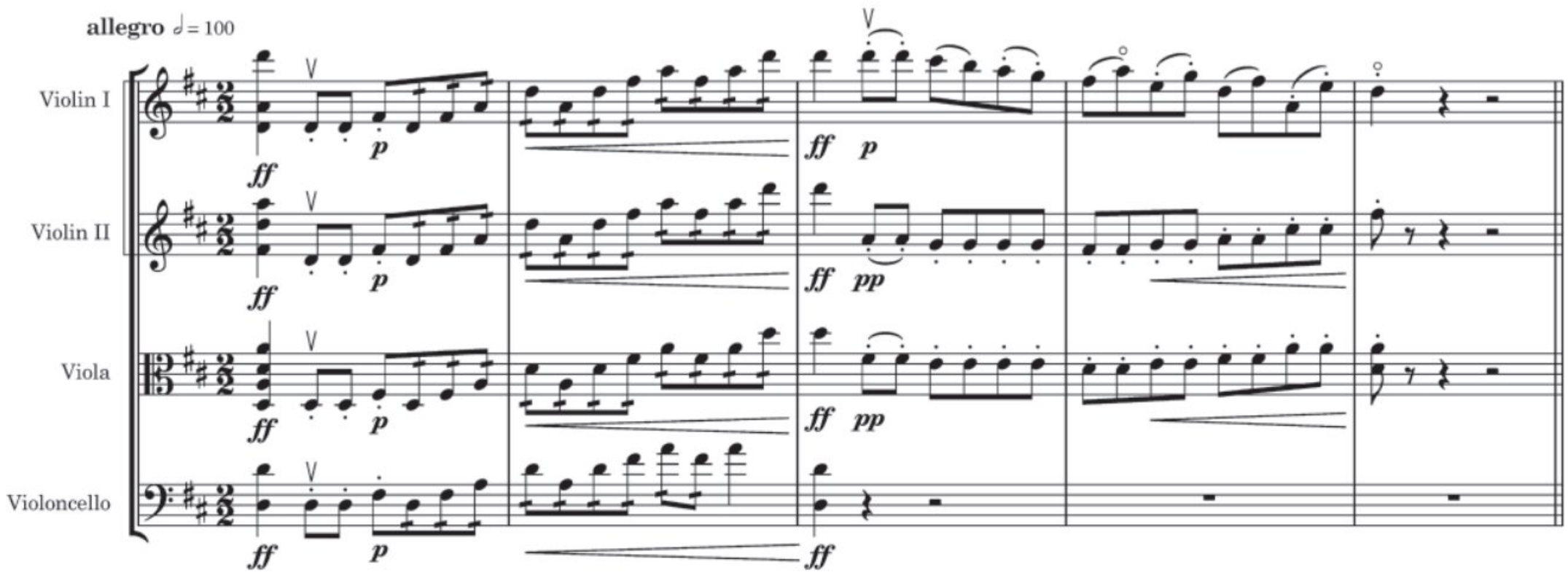
1 **Brainstorm a list of at least 12 questions about this comparison. Why did Stamitz or Prokofiev…? What would be different if…? What is the purpose of…? What would change if technology was introduced?**

2 **Review the brainstormed list and star the questions that seem most interesting. Then in small groups select one to discuss for a few moments.**

3 **Reflect: What new ideas do you have about the Mannheim school or Prokofiev comparison that you didn't have before?**

Hint

Prokofiev was often referred to as a 'neo-classical' composer who would structure his 20th Century ideas using classical idioms (structures, forms and patterns). This is a great reminder that we all learn from those who created art before us.
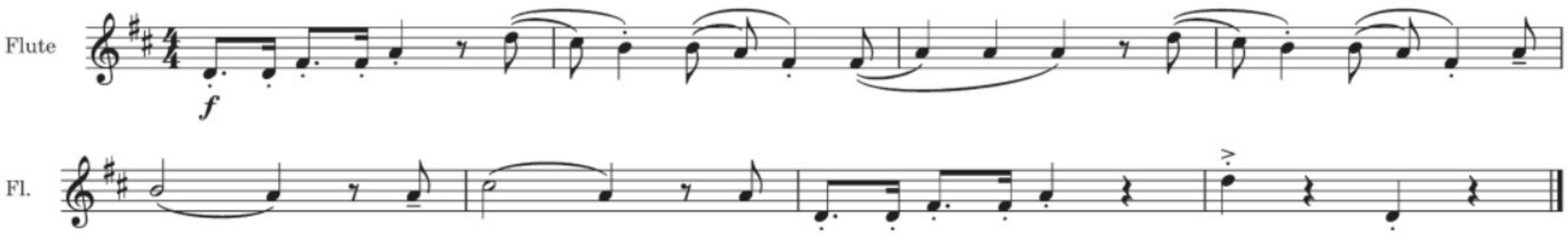


■ **Figure 11.11** Prokofiev *Classical Symphony* 'Mannheim Rocket' opening in the strings

EXTENSION

Creating: Learning from Haydn's melody

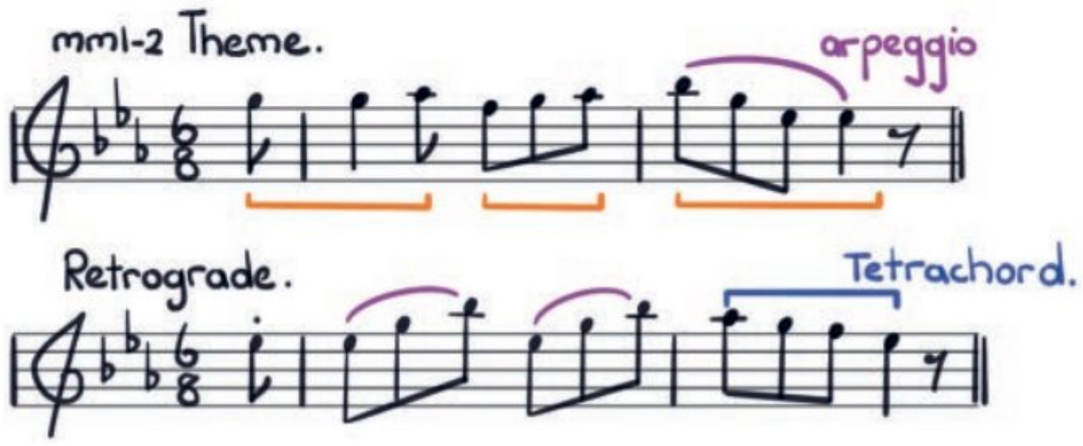
Play Haydn's theme from Figure 11.10. Now **use** Haydn's melody as a skeleton to create your own 8-measure theme. Be creative and find ways of using **motivic development**!



■ **Figure 11.12** Example melody following Haydn's with ties and repetition. You could add a bit of Stormzy or Anomalie to this!

Haydn spent years practising with his orchestra, whereas we can now test our ideas with technology!

How does motivic development contribute to the DNA of an artist's style?



■ **Figure 11.13** How to transform a motif of Haydn's by turning it backwards!

HAYDN AND HIS STUDENT, MOZART

Haydn's **string quartets** represent a change in classical music as each player became an equal voice. The 'Op. 33 String Quartets' were written for the Viennese publisher Artaria and dedicated to Grand Duke Paul of Russia.

Listen to Haydn's 'String Quartet in E flat, Op. 33 No. 2, The Joke movement IV' on the playlist. The 'joke' is clearly dependent on audience participation. The movement is a form popular at the time called *rondo*, where the overall structure follows an outline of A-B-A-C-A; the 'A' section being the theme that everyone remembers and therefore anticipates its return.

At the end of the *rondo*, starting at measure 148, Haydn's joke begins with a series of false endings, and wrong places to clap and applaud!

ACTIVITY: Haydn's *Joke Op. 33, No. 2*

ATL

- Creative thinking skills: Focusing on the process of creating by imitating the work of others

In this activity, we will **use** Haydn's A-B-A-C-A rondo theme and fill in the new sections of 'B' and 'C' with our own melodic creations. This means, taking the notated examples (See Figure 11.13) as our foundational material, we write two different melodies (B and C) by:

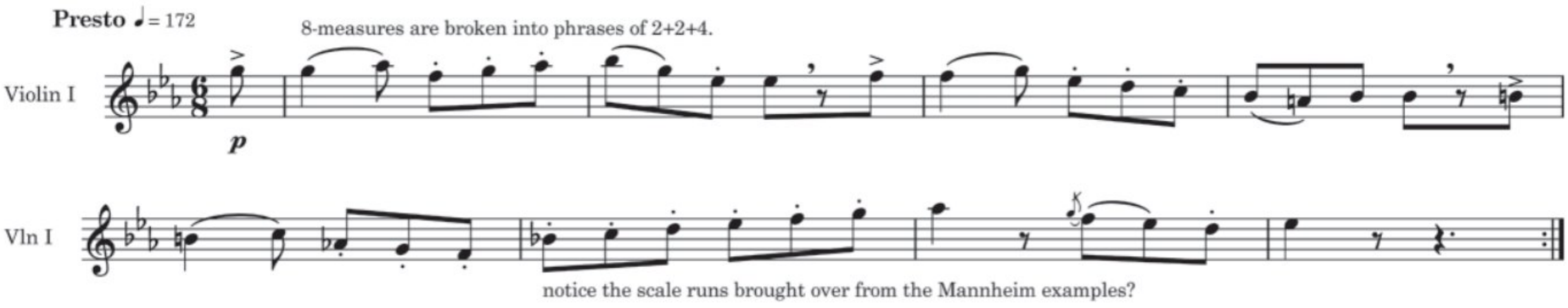
1. **keeping the time signature of 6/8**
2. **keeping the key signature of E♭ major**
3. **following a similar structure of 8 measures with two equal 4-bar phrases.**

The ultimate goal is to have a set of Haydn-related rondo themes that we can perform and record ourselves; themes that sound different from Haydn's 'A' section, but still work within the context of Classical-era melodies: **a** They use scale-patterned phrases with arpeggios, **b** end the fourth phrase on a dominant note, **c** end the final phrase on the tonic note and **d** use both ascending and descending shapes.

Keep track of your ideas and each line that you play, sing or notate. This process is important for **developing** your own expressive voice.

Assessment opportunities
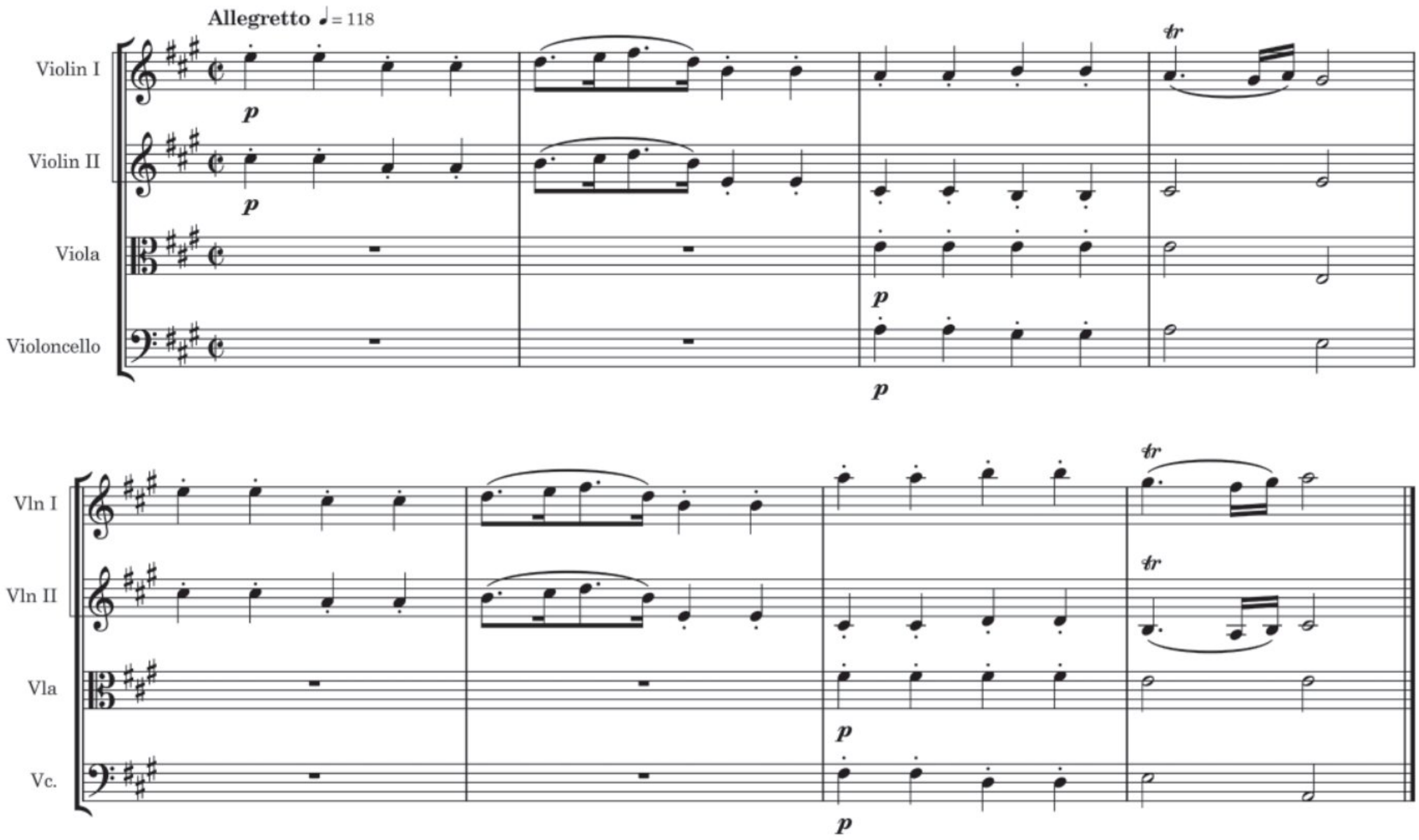
In this activity you have practised skills that are assessed using Criterion B: Developing skills and Criterion C: Thinking creatively.



■ **Figure 11.14** Haydn's *rondo* A theme 'Op. 33 No. 2 4th mvt' mm1–8

Wolfgang Amadeus Mozart (1756–1791) was taught by Haydn, and Haydn's 'Op. 33' quartets had a profound effect on his own compositions. Mozart dedicated six of his quartets to Haydn (published in 1785 as 'Op. 10'), and he built on his teacher's ideas of thematic development, adding his own voice of expression. Yet it is his 'Clarinet Quintet in A major K581' that combines both melodic development and something called the *concertante style*.

Concertante chamber music is music that sees both the soloist and accompaniment participate on almost equal terms. Listen to the 4th movement of Mozart's clarinet quintet 'Allegretto con Variazioni' and compare it to the final movement of Haydn's 'Op. 33 No. 2 String Quartet'.



■ **Figure 11.15** Mozart's theme in A major K581 4th movement (presented just in the strings for clarity)

The form or structure of this movement is called **theme and variations**. It uses similar concepts of repetition to rondo form; however, after the initial theme is stated, all subsequent versions are changed by adding countermelodies (variation 1), fragmenting then **diminuting** or **augmenting** the rhythm (variation 2), changing from A major to A minor and giving the melody to the viola (variation 3), rapid flowing 16th note arpeggios (variation 4) to finally a slow (*adagio*) section in **canon**, ending with the main theme.

ACTIVITY: Thematic development with Mozart

ATL

- Reflection skills: Keeping a journal to record reflections

Using Mozart's opening theme from the fourth movement, we will be **creating** our own changes to perform and record a fifth variation.

1. **Play the opening 8-measure theme in Figure 11.15, or sing it as a class.**
2. **Using software create a String Quartet template in A major with a cut-common time signature of 2/2.**
3. **You can start remixing the theme by chopping up the measures, for example replace measure 1 with measure 4, repeat measure 2 and cut up measure 3.**
4. **Create several versions and play it to a friend for feedback. Share your ideas with one another and make edits as needed.**
5. **Once you have your variation 5 finished, share your creations as a class and document in your portfolio how each person completed their variations (or remixes).**

By altering each melody line in your own way, you are engaging in a creativity technique that focuses on investigating the process of artists. When you play a melody by any composer, turn it into something else by applying the principles of melodic development. You will be surprised how you can improvise original material!
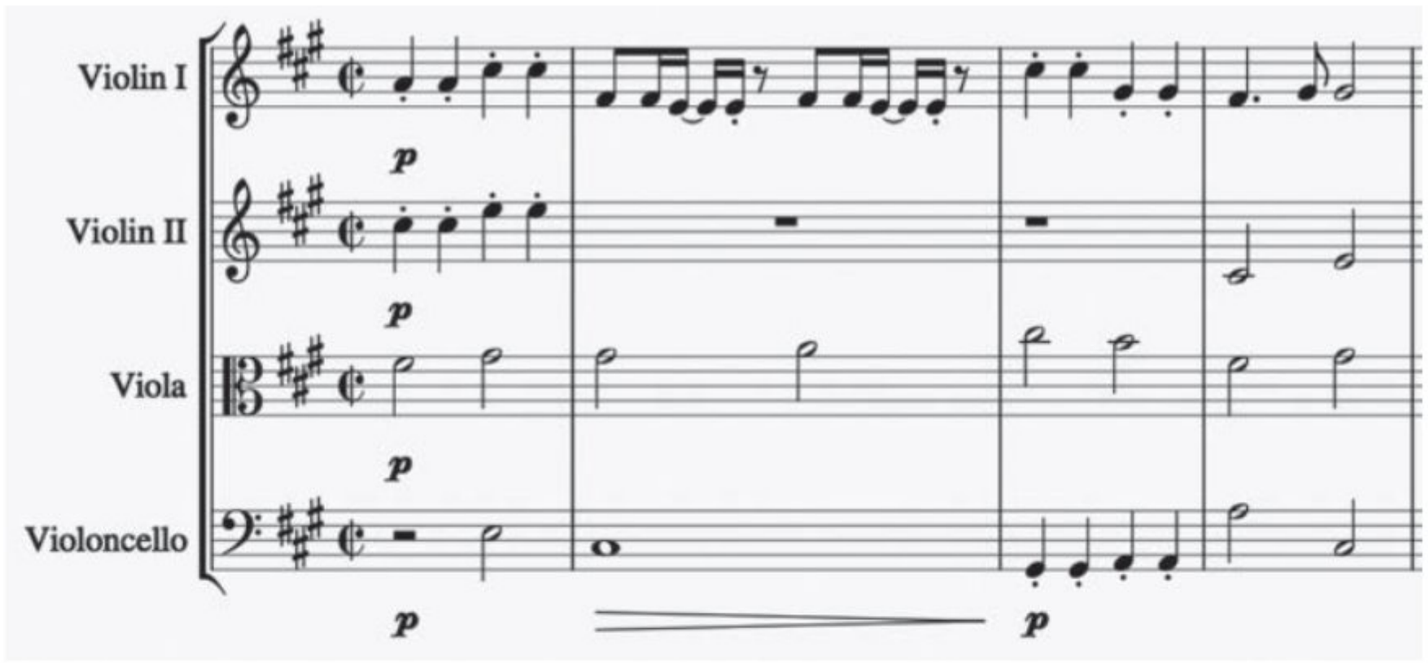


Figure 11.16 Student sketch of a variation based on Mozart's themes

Assessment opportunities

In this activity you have practised skills that are assessed using Criterion A: Knowing and understanding and Criterion D: Responding.

Portfolio presentation

Experimenting with Berio No. 2

> *"'Sequenza IX' for clarinet… is essentially a long melody implying… symmetries, transformations and returns… developing a constant transformation between two different harmonic fields: a seven-note one (F sharp, C, C sharp, E, G, B flat and B natural) appearing always in the same register, and a five-note one appearing in ever-different registers…"*

In 'Sequenza IXa', we get an insight into the true colours and range of the clarinet using something Berio calls *harmonic fields*. The clarinet is a versatile instrument, with three colourful ranges called the *chalumeau*, *throat* and *clarion registers*.

Berio develops a set of **pitches** that utilises one register, with a group of notes that extends into the others.

Listen to the track on the playlist and, using software like MuseScore, notate your own melodic themes in the three registers by sticking to groups of notes in each.

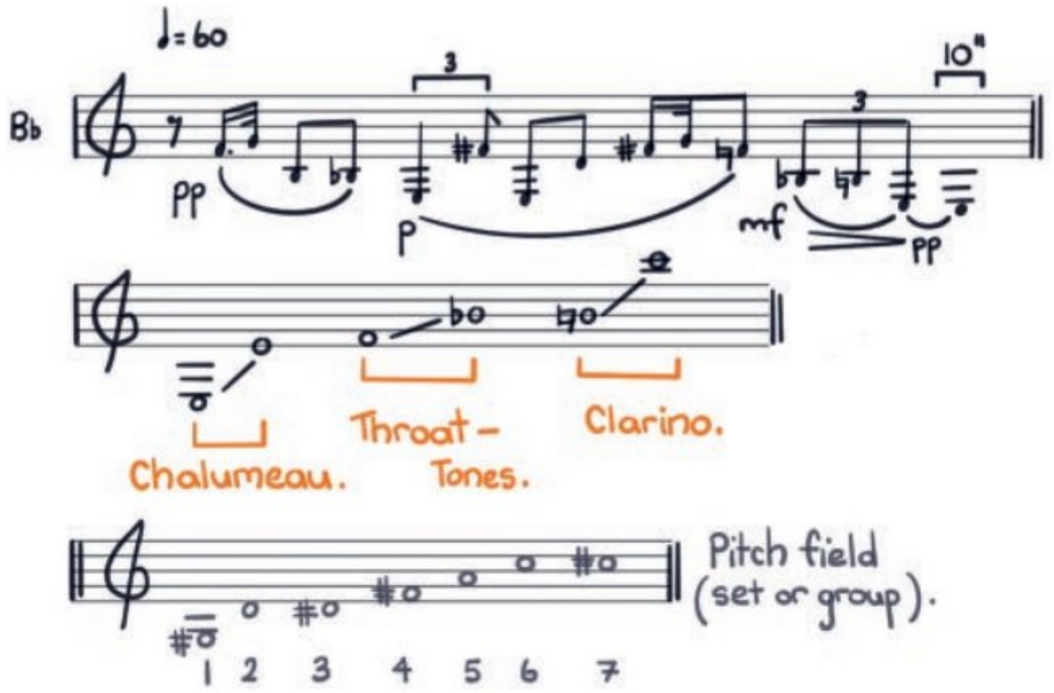


Figure 11.17 'Sequenza IXa' transcription of the first 10s with clarinet registers (Berio begins in the bottom register)

How is change reflected within artistic expression?



■ **Figure 11.18**

CREATIVE QUESTIONS

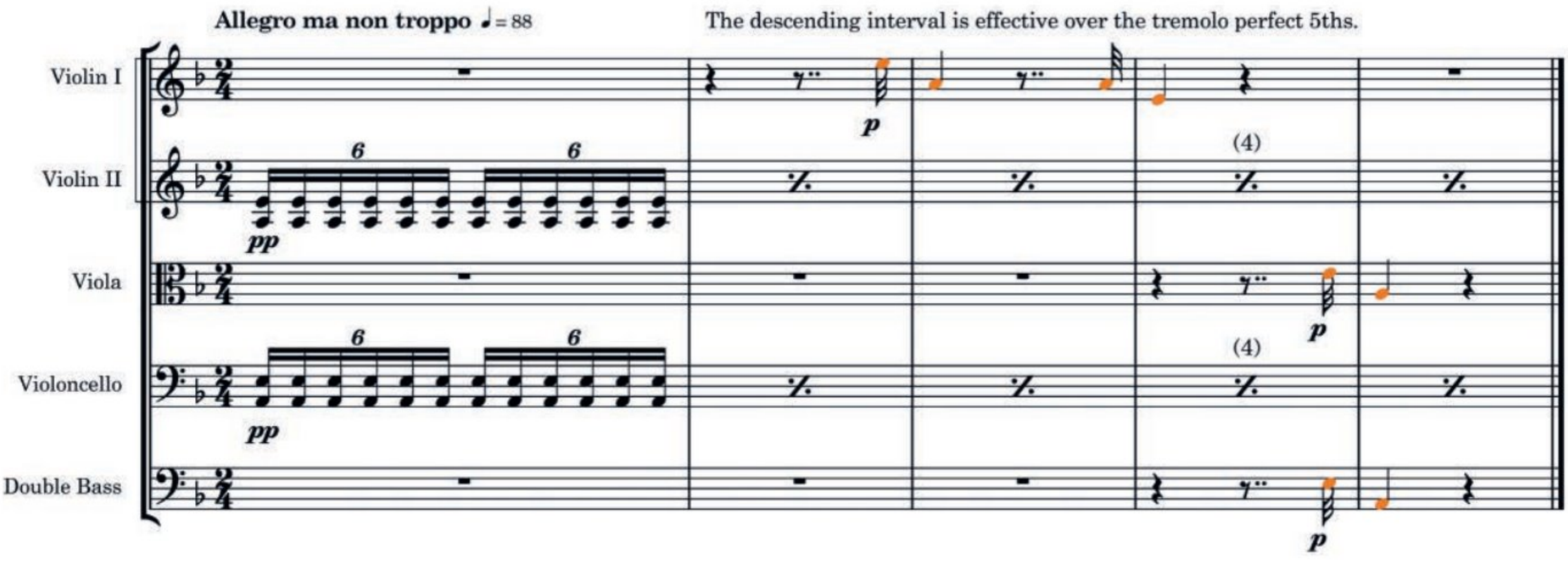
1. **Listen** to the opening of Beethoven's 9th symphony and **create** a list of descriptions in your portfolio for every time you hear the falling 5th-4th-5th interval motif.
2. **Look** over the list and, thinking along the lines of motivic development, ask yourself questions such as: What would it be like if…? Suppose that…? How would it look differently if…?
3. **Explore** these questions. Get into groups and play different versions of your ideas on pianos, keyboards, tablets or other devices.
4. **Reflect**: What new ideas do you have about Beethoven's use of these intervals that you did not have before?

BEETHOVEN'S MESSAGES

German composer and pianist, Beethoven is an iconic figure in the changes that swept Europe in the late 18th Century. Ludwig van Beethoven (1770–1827) was no stranger to change in his lifetime; from losing his hearing to his severe disappointment as Napoleon declared himself Emperor in 1804:

> *"Now he, too, will tread underfoot all the rights of man [to] indulge only his ambition; now he will think himself superior to all men [and] become a tyrant!"*

The 'Symphony No. 9 in D minor, Op. 125' was first performed in Vienna on 7 May 1824, and it has come to represent a pivotal moment in musical history. The opening first movement 'Allegro ma non troppo, un poco maestoso' has powerful connections to both the Mannheim school and Haydn's 'London Symphony No. 104'. The opening brings in the descending perfect 5th to perfect 4th intervals we heard in Figure 11.9, however Beethoven expands on this using rhythmic diminution and then thunders into full orchestral octave blows that build on the previously mentioned Mannheim techniques.



■ **Figure 11.19** Opening of Beethoven's 9th symphony

In 1809 when Napoleon attacked Vienna, the Archduke Rudolph of Austria had to flee the siege that would inevitably engulf the city. Many of the citizens of Vienna witnessed the horrors of war, none more so than the Battle of Wagram. It was so close they could see the carnage from their rooftops. In a letter written shortly after the battle, Beethoven wrote:

> *"What a destructive, disorderly life I see and hear around me, nothing but drums, cannons, men, and human misery in every form."*

This became the background of change for his 'Piano Sonata No. 26 in E♭ Major Op. 81a Das Lebewohl'. The very opening expresses so much sorrow in its descending passage that the German *Lebewohl* ('fare-thee-well') can be heard in the opening three descending chords.

ACTIVITY: *Lebewohl und Napoleon*

ATL

- Communication skills: Using and interpreting a range of discipline-specific terms and symbols
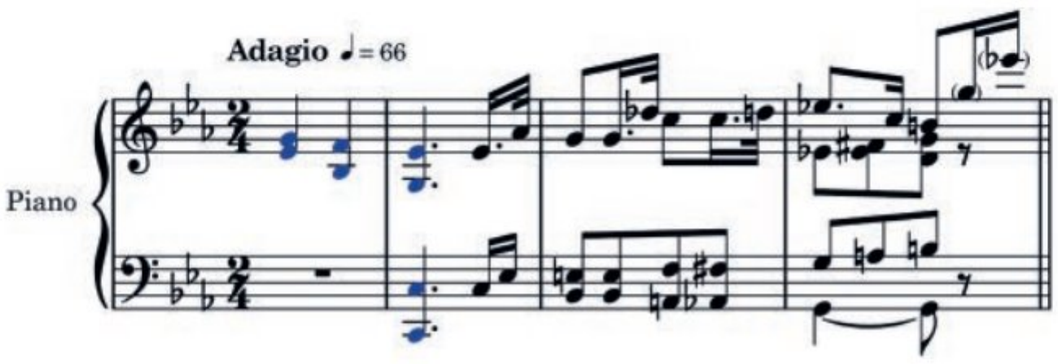


Figure 11.20 *Lebewohl* motif

Rhythmically, this motif uses two short notes followed by a longer note, outlined in blue, above. Additionally, the chords could be following a I (E♭)-V (B♭)-vi (Cm) progression; however, this will be up to you to decide.

1. **Play the opening *Lebewohl* farewell motif in blue, on any instrument you can.**
2. **As a series of experiments, add a different bass line each time you play the top parts. Make sure you document the changes and emotions each bass line communicates.**
3. **Now add in a series of arpeggio patterns in the left hand. You can record them in applications like GarageBand or notate them for someone in your class to perform.**
4. **Finally, collect all of your *Lebewohl* themes and perform them for each other. Do some parts communicate more sadness and turmoil than others? What effect did adding bass lines or arpeggios make to the three descending intervals?**

Assessment opportunities

In this activity you have practised skills that are assessed using Criterion C: Thinking creatively and Criterion D: Responding.

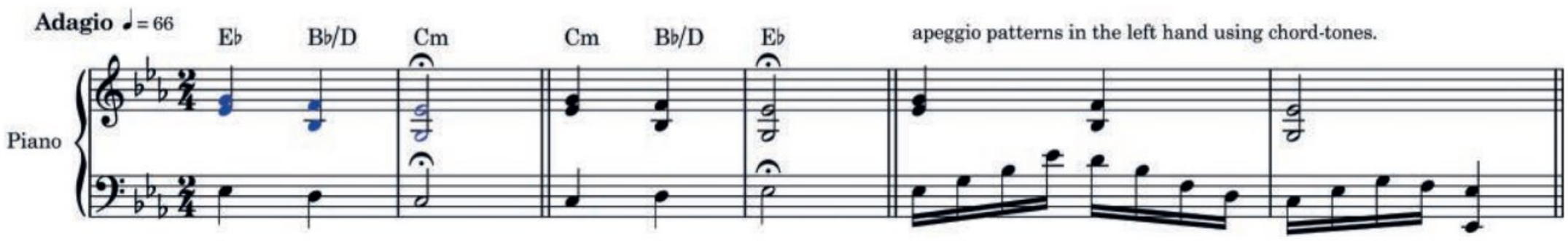


Figure 11.21 *Lebewohl* motif with different bass lines

How did the 20th Century establish change in the world of music?

STRAVINSKY BROUGHT THE CHANGE WE NEEDED

The history books speak of Igor Stravinsky's (1882–1971) incredible introduction of rhythmic variation and (often violent) harmonic colouring to music of the early 20th Century. However, not many focus on the storytelling power of Stravinsky's ideas. The world was a different place in 1900, and Stravinsky brought with him the history and culture of Russia as his muse.

L'Histoire du soldat ('The Soldier's Tale') is a theatrical work to be *read*, *played* and *danced* for seven instruments and narrators. Premiered in 1918 and written by Stravinsky and Swiss writer C.F. Ramuz, it was based upon a Russian folk tale where the devil torments a soldier trying to get home to his loved one. Following the evils of the First World War, the plot is relevant. Written in two parts, the score calls for a small arrangement of clarinet, bassoon, cornet, trombone, percussion, violin and double bass. It is in typical Stravinsky fashion that rhythm is a dominant focus and alternating time signatures create something called *asymmetrical rhythm*.

1 Listen to the opening of Part 1 Scene II: 'The soldier's violin'.
You can also watch a score version on YouTube at **https://youtu.be/JgSGTO36zUs?t=169**



■ **Figure 11.22**

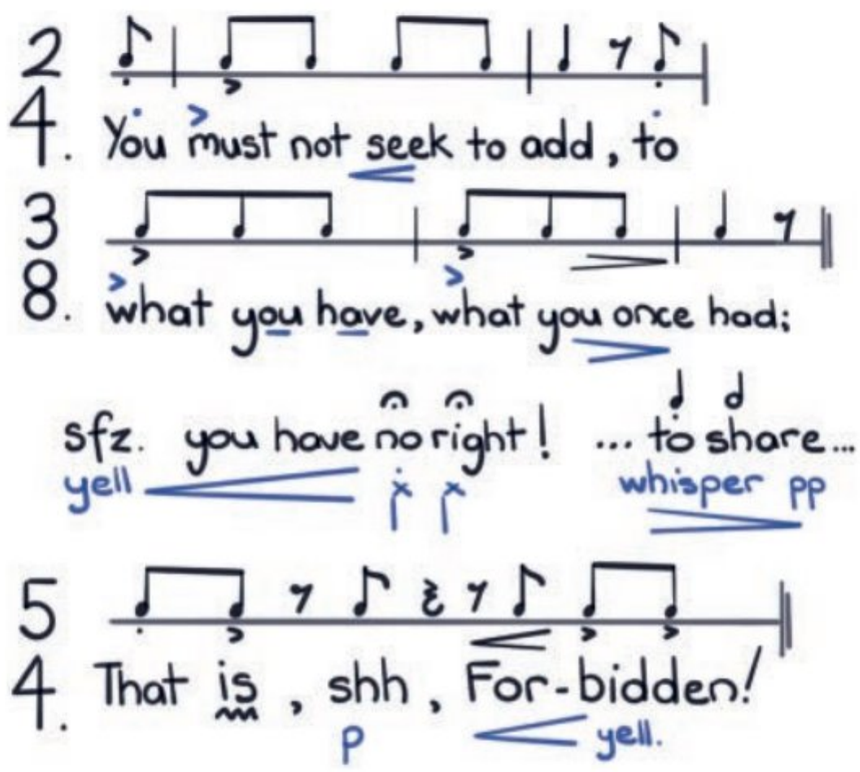
2 As you listen or watch from a score, notate in your portfolio the main violin **ostinato** and any other recurring features that you identify. The changes in time signature create an interesting moving **texture** within the instrumental parts.

The story does not end well for the soldier, and as the narrator concludes with this statement:
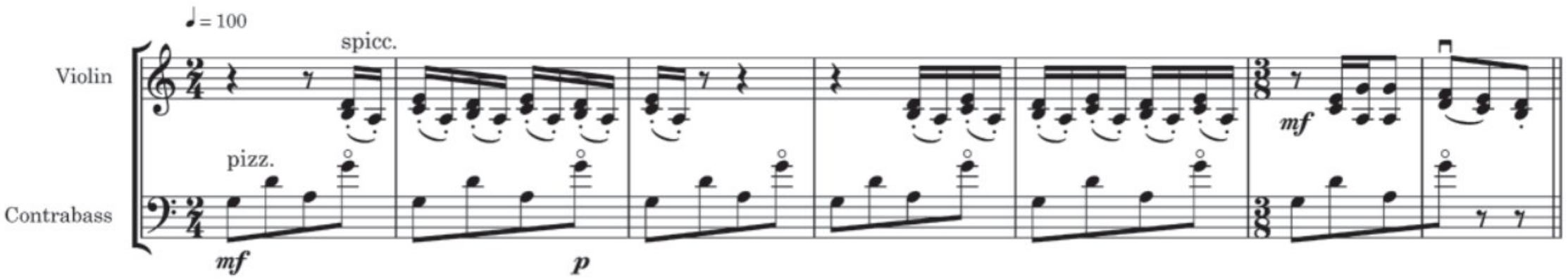
"You must not seek to add
To what you have, what you once had;

You have no right to share
What you are with what you were.

No one can have it all,
That is forbidden…"



■ **Figure 11.24** Improvised rhythmic examples of the *concluding narration.*



■ **Figure 11.23** Violin ostinato from Part 1 Scene II mm2–6

ACTIVITY: *L'Histoire du soldat*

ATL

- Communication skills: Using appropriate forms of writing for different purposes and audiences

The final narration is going to be our inspiration and, much like Stravinsky, we will focus on the rhythm of these words to **create** themes of our own.

1. **In pairs, read the words to each other, placing accents or stresses on each syllable or phrase. Does each line have the same or a different rhythmic feel? For example, Figure 11.24.**
2. **Copy the text into your portfolios and decide on a time signature for the accented phrases you identified with your partner.**
3. **Practise chanting to group the phrases into a series of rhythmic patterns. If you can add rhythmic notation, or examples of graphic notation, write this above the words.**
4. **After rehearsing your patterns, notate them into software. You will need to make edits and possibly include some time-signature changes.**

Words and stories are powerful forms of inspiration when it comes to performing and creating art. Stravinsky may have introduced change to the music of the 20th Century, but was this change already on the horizon?

Assessment opportunities

In this activity you have practised skills that are assessed using Criterion B: Developing skills and Criterion C: Thinking creatively.

Music exploration: Stravinsky fragmented

Motivic development is sometimes a complicated process when studying music of the past. We have made a large leap from the late Classical period into the 20th Century, and yet the process of developing ideas remains constant. The ideas themselves have transformed, taking on new areas of focus (such as rhythm), but composers continue to build on the past.

Written in 2015 for voice, chorus, string quartet, organ and two percussionists, the work *Stravinsky Refracted* 'A Musical Setting of Amy Lowell's poem: Stravinsky's Three Pieces "Grotesques"', by Dominick DiOrio (b. 1984) is a great example of musical transformation.

> *"My aim has been a further musical transformation. While Lowell's poem was influenced by the sound qualities and folklorist gestures of Stravinsky's pieces, I wish to complete the circle and return these words to music… I use much of the original musical content of Stravinsky's pieces (motifs, pitch content, entire phrases verbatim), but I also add further dimensions of timbral interest and color in scoring for instruments suggested [by the words] of Lowell's poem…"*
>
> *Dominick DiOrio*

DiOrio's website hosts the poem, score and performance of his work, where you can listen and add your own reflections. Using your portfolios evaluate and reflect on his approach to combining poetry and Stravinsky's music. Is this remixing? A mashup? Or something new?: **www.dominickdiorio.com/works?id=51**

What is the Russian school of music?



■ **Figure 11.25**
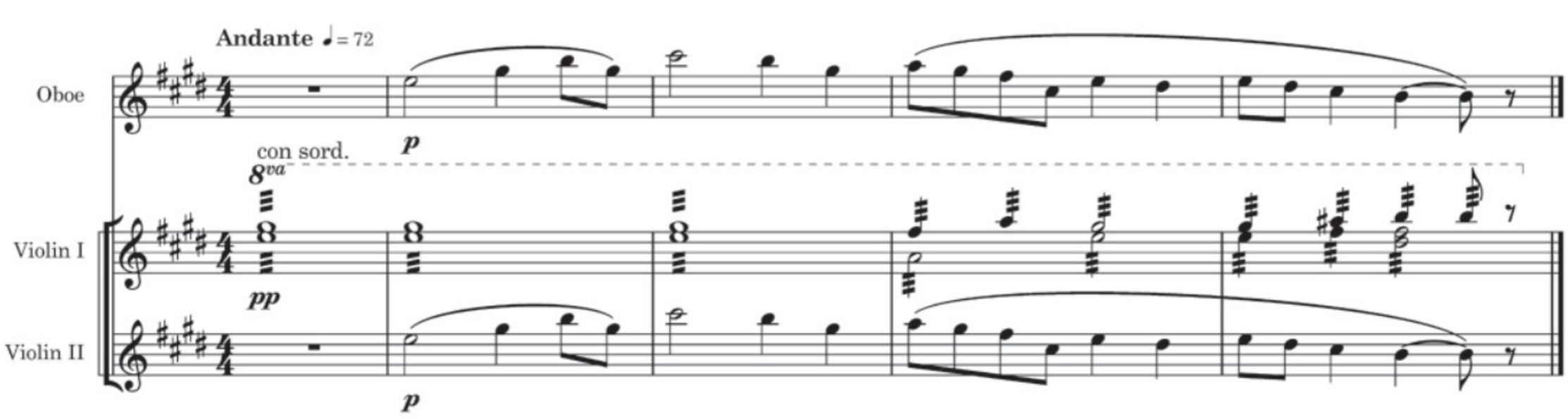
MUSSORGSKY TO SHOSTAKOVICH

The Russian school was a result of further change in the 19th Century. Russian composers known as *The Five* began working together to establish a distinctly Russian national style of music that had, for a long time, been dominated by musical influences from Italy, Germany and France. Mily Balakirev, César Cui, Modest Mussorgsky, Nikolai Rimsky-Korsakov and Alexander Borodin collaborated from 1856 to 1870 to incorporate what they heard in villages, dances, chants and Russian life into their music. Interestingly, the marriage of music and storytelling never left the imaginations of Russian composers.
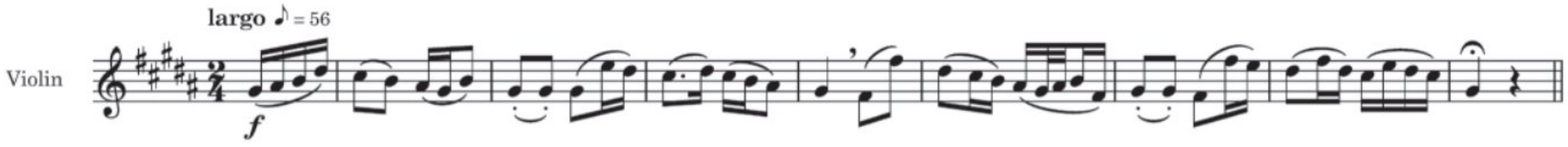
Modest Petrovich Mussorgsky (1839–1881) is known especially for his colourful portrayal of Russian life, the supernatural and nature within his works. However, in 1881, one month after Mussorgsky's death, his friend Rimsky-Korsakov found the outline of an opera in Mussorgsky's belongings titled *Khovanshchina, The Khovansky Affair*. A part of Russian history, the opera deals with the rebellion of Prince Ivan Khovansky in 1682 against two tsars, Peter the Great and Ivan V, who were attempting to bring Western reforms to Russia. (Spoiler: it did not go well for Khovansky.)

Mussorgsky dramatises the acts of Khovansky and his followers (known as the *Khovanschina*) in this 'national music drama', with beautiful themes that are developed throughout the opera. When you listen to the tracks on the playlist, you can identify distinct folk-like melodies, rising and falling shapes and, in the case of the 'Dance of the Persian Slave Girls', the addition of a **chromatic** note 'B#' that adds an exotic sound to the melody.

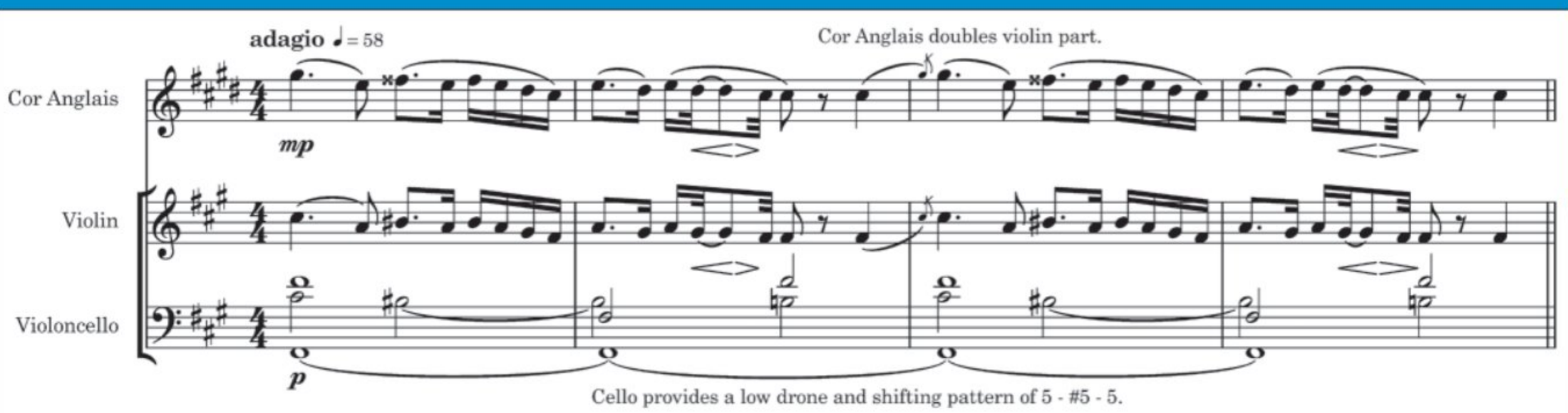
Each time we hear the themes, they are clearly stated and often doubled by other instruments.



■ **Figure 11.26** 'Dawn over the Moscow River', *Khovanshchina* introduction



■ **Figure 11.27** Act 4 Scene I *Khovanshchina* transcription of Aeolian / minor theme



■ **Figure 11.28** Act 4 Scene III 'Dance of the Persian Slaves' theme

ACTIVITY: The Mussorgsky theme

■ ATL

■ Creative thinking skills: Creating original works and ideas; using existing works and ideas in new ways

In this activity, we are going to work with the musical ideas above to **create** our own: **a** Russian nationalistic folk melody, **b** played by two instruments and **c using** specific intervals and shapes.

To do this, you will need to create a template in MuseScore for two violins, or in GarageBand with two *smart* violins, or with two instruments that you have physically in your classroom.

1. **In pairs, choose one of Mussorgsky's themes to play and perform together, in unison. Once you can play it together, choose one performer to add in small edits or repeating notes to the melody.**
2. **Once you have played a Mussorgsky theme in pairs, notate it into your portfolio, labelling its shape, intervals and even the start and ending notes (such as in Figure 11.28).**
3. **Using our *remixing idea* with Mozart, swap measures around and fragment the phrases to create smaller ones. Notate and record your own remixed 8-measure theme from these experiments.**
4. **Lastly, perform your new melody together. Then, as at the start of this activity, one of the performers can add ornaments, small edits, or repeat notes while playing the melody.**

What changes in the texture when two melodies are played together?

What changes in the texture when one performer adds small variations?

This collaboration and form of expression will be vital in the final summative. Keep a record in your portfolio of how you changed Mussorgsky's original theme.

◆ Assessment opportunities

In this activity you have practised skills that are assessed using Criterion B: Developing skills and Criterion C: Thinking creatively.

! Take action

- ! Find out how music has been transformed and expressed around the world in different contexts and centuries.
- ! Explore techniques of expression that give rise to new ideas and sounds.
- ! Search out new, diverse artists. Develop an original listening approach that involves understanding context and forms of expression.
- ! Develop a music service for your community to experience, perform, follow or learn about new artists – outside their current playlists. Collect example tracks from your friends or teachers, visit record stores or interview grandparents or those at a local nursing home. Collect musical examples from all around the world. Share your findings on a website or interactive document to promote the connecting love of music. You could be opening new listening doors for many people.

Listening strategically: Get an IDEA

Shostakovich's Suites
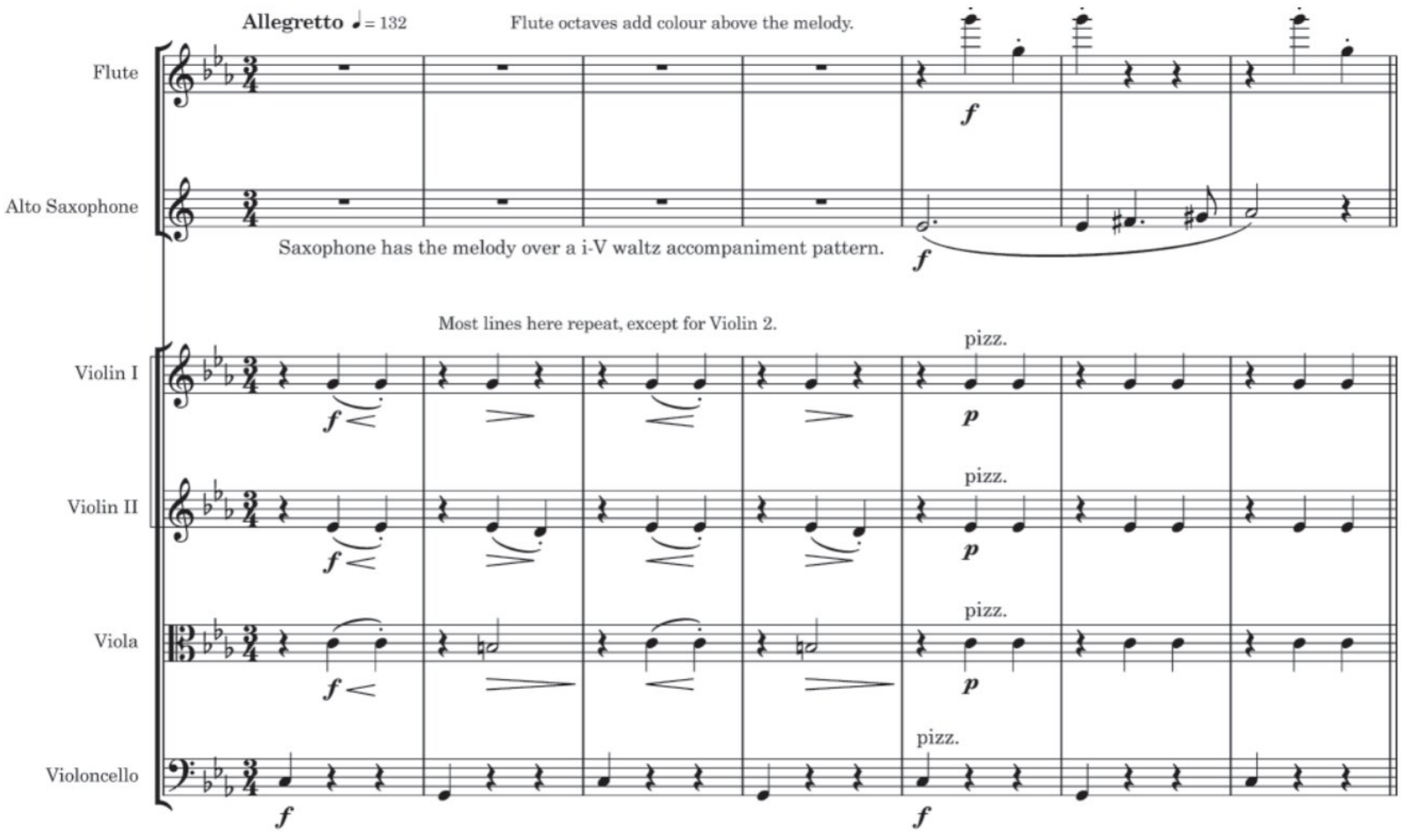
Dimitri Shostakovich (1906–1975) was a brilliant Russian composer who continued building on the example set by *The Five*. However, under the rule of Stalinist Russia, Shostakovich had to compose music that would fit with a different set of national principles:

> *"For the expression of these new forms created by the Revolution a new style is essential… called heroic realism… The creation of a revolutionary art is first and foremost the creation of an art that will have the honour of shaping and organising the psychology of the generations to come."*
>
> *Association of Artists of Revolutionary Russia, 1924*

In 1938, Shostakovich composed his *Second Jazz Suite* (or *Suite for Variety Orchestra*) at the request of the recently founded State Orchestra for Jazz. Wary as Stalin had just walked out of his 1936 performance of *Lady Macbeth*, Shostakovich knew any errors would cost him his life. So he kept the score to himself.

> *"Now everyone knew for sure that I would be destroyed. And the anticipation of the noteworthy event – at least for me – has never left me. From that moment on, I was stuck with the label 'enemy of the people' and I don't need to explain what the label meant in those days."*

Listen to a movement from this work entitled 'Lyric Waltz' (5th movement of the *Suite for Variety Stage Orchestra*) using the playlist. Then in your portfolio, create a detailed listening map that outlines three different points following the steps of **identify**, **describe**, **explain** and **analyse** (**IDEA**). A beginning structure has been provided for you:



■ **Figure 11.29** Musical outline of 'Lyric Waltz' showing the waltz accompaniment using Cm (i)-G (V) and top two melodic instrument choices

What is a 12-tone matrix?

Music exploration: The 12-tone matrix

In your portfolio, sketch out a melody from any row in Figure 11.30. Use an improvised rhythmic pattern, and tell yourself 'bar lines are not needed'. Now play or sing your 12-tone melody. What does it sound like to you? Add in bar lines. Does this change your melody?

Repeat this process a few times with different versions of the rows, labelling them as P6, R6 or RI3, for example. Can you develop them into a series of ostinato or playable phrases?

	I_0	I_1	I_6	I_2	I_{10}	I_9	I_4	I_7	I_3	I_8	I_{11}	I_5	
P_0	F♯	G	C	G♯	E	D♯	A♯	C♯	A	D	F	B	R_0
P_{11}	F	F♯	B	G	D♯	D	A	C	G♯	C♯	E	A♯	R_{11}
P_6	C	C♯	F♯	D	A♯	A	E	G	D♯	G♯	B	F	R_6
P_{10}	E	F	A♯	F♯	D	C♯	G♯	B	G	C	D♯	A	R_{10}
P_2	G♯	A	D	A♯	F♯	F	C	D♯	B	E	G	C♯	R_2
P_3	A	A♯	D♯	B	G	F♯	C♯	E	C	F	G♯	D	R_3
P_8	D	D♯	G♯	E	C	B	F♯	A	F	A♯	C♯	G	R_8
P_5	B	C	F	C♯	A	G♯	D♯	F♯	D	G	A♯	E	R_5
P_9	D♯	E	A	F	C♯	C	G	A♯	F♯	B	D	G♯	R_9
P_4	A♯	B	E	C	G♯	G	D	F	C♯	F♯	A	D♯	R_4
P_1	G	G♯	C♯	A	F	E	B	D	A♯	D♯	F♯	C	R_1
P_7	C♯	D	G	D♯	B	A♯	F	G♯	E	A	C	F♯	R_7
	RI_0	RI_1	RI_6	RI_2	RI_{10}	RI_9	RI_4	RI_7	RI_3	RI_8	RI_{11}	RI_5	

■ **Figure 11.30** A tone row from www.musictheory.net/calculators/matrix

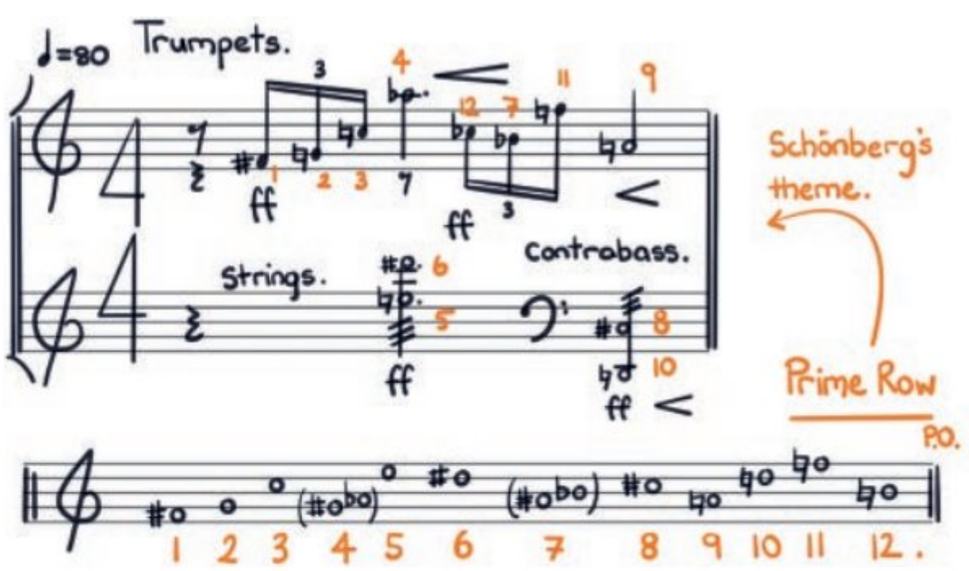
THE SECOND VIENNESE SCHOOL BEGINS

> *"I cannot remember everything. I must have been unconscious most of the time. I remember only the grandiose moment when they all started to sing…"*
>
> *Arnold Schönberg*
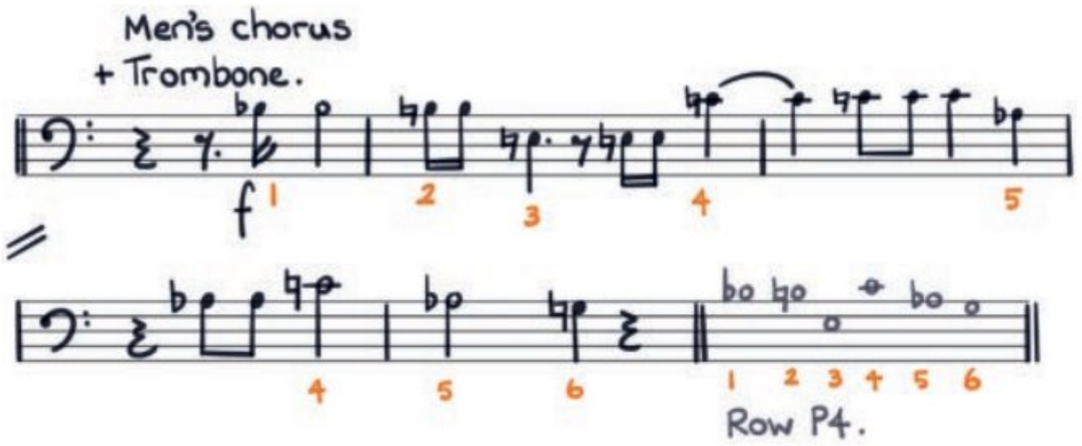
What does change inspire? The transformation of ideas! The Second Viennese school was, again, not a building, but rather the works of composer Arnold Schönberg (1874–1951), his pupils (Alban Berg and Anton Webern), plus contemporaries in Vienna during the early 20th Century. The style of these composers moved through several stages of late-Romantic music, chromatic expressionism and, lastly, a serial, or 12-tone.

'A Survivor from Warsaw for Narrator, Men's Chorus and Orchestra Op. 46' was written in 1947 and narrates the story of a survivor from Warsaw's ghetto during the Second World War. Nazi soldiers, in the course of rounding up survivors, demand that those still standing count off faster and faster before they are killed. As a sign of solidarity the survivors break into singing the 'Shema Yisrael'.

> *"Schönberg [here] refers back to the Jewish statement of faith, the 'Shema Yisrael', which plays a central role in the lives of religious Jews. The 'Shema' is recited as the central confession of Judaism in times of happiness and suffering…"*



■ **Figure 11.31** Annotated opening motif of 'A Survivor from Warsaw' using row P0 from Figure 11.29



■ **Figure 11.32** 'Shema Israel' in 12-tone arrangement using Row P4 from Figure 11.30

Repeating several times through the work, the fanfare motif in Figure 11.31 is based upon the sequential arrangement of 12 pitches into a primary (P0) row. If you look at Figure 11.30 and move down to row P4, we now have the 'Shema Yisrael' theme. Schönberg uses this matrix to generate musical material with some particular requirements:

1. A row has no fundamental key or home pitch. It is a structure, not a complete theme.
2. A row can be played vertically as a melody or horizontally as chords in the music.
3. The *P* stands for prime or original row, the *R* for **retrograde** or backwards row.
4. The *I* stands for **inversion**, and *RI* for **retrograde inversion**.
5. The notes can be played in any octave with any rhythmic **duration**.
6. You should use all the notes of one row, without repeating pitches, before moving on.

ACTIVITY: String quartets by Matrix

ATL

- Organisation skills: Selecting and using technology effectively and productively

Using MuseScore, or another notation application like Symphony Pro, **create** your own 12-tone string quartet keeping the rhythms and tempo the same as Schönberg's. Visit **www.musictheory.net/calculators/matrix** to generate your own serial rows and aim to notate 8–16 measures of music – no matter how bizarre it turns out!

As you listen to 'String Quartet No. 4 Op. 37 Allegro Molto, Energico', sketch your own musical analysis of the work. You could **use** the artworks of Schönberg and Kandinsky as inspiration and visit **www.bl.uk/20th-century-music/articles/the-second-viennese-school** to learn about Schönberg's contribution to the Second Viennese school.

The sound of Schönberg's early string quartets quite literally changed the way music was thought of in the 20th Century:

> *"In 1908, with his 'Second String Quartet, Op. 10', Schönberg led the musical world, whether [he] liked it or not, to breathe, 'the air of another planet'…"*

Assessment opportunities

In this activity you have practised skills that are assessed using Criterion C: Thinking creatively.
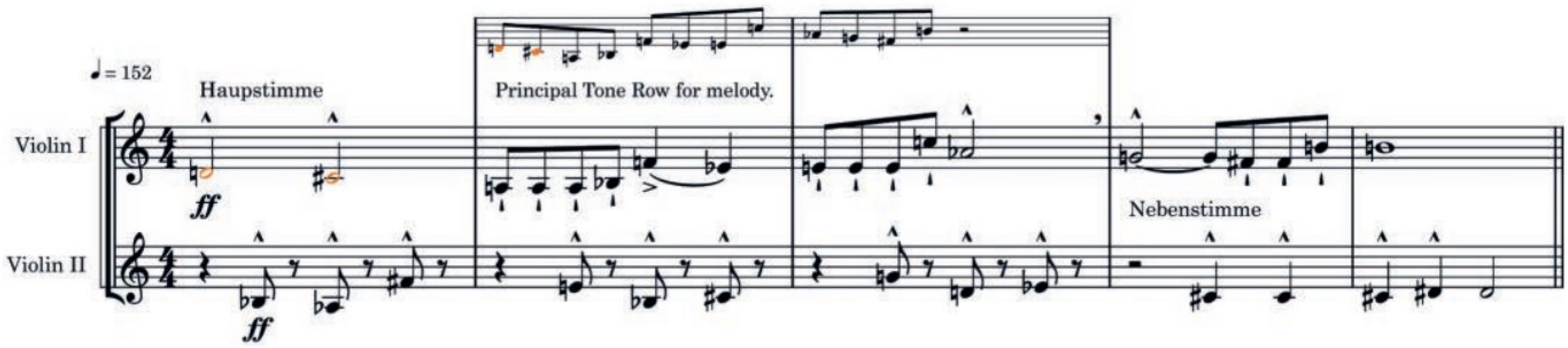


Figure 11.33 'String Quartet No. 4' measures 1–5 using the principle row P0 above.

What is *Klangfarbenmelodie*?

I USED TO THINK… BUT NOW I THINK…

Take a few moments to ask yourself two questions:

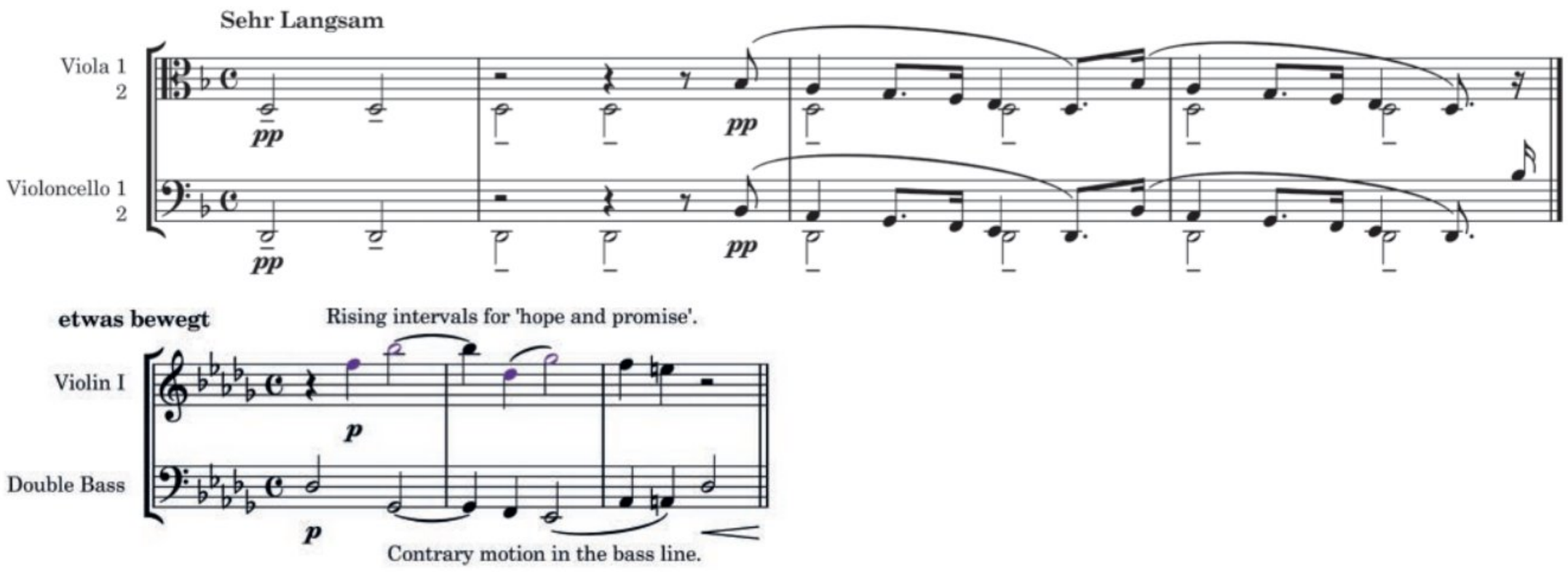
1. **If I had to express deep, conflicting emotions through music, where would I start?**
2. **If I had a poem that expressed deep, conflicting emotions, could I write music to that poem?**

In 1899 a work by Schönberg pre-empted the changes that would soon erupt in the 20th Century. We listen to this now and it feels like a film-score. Visit the score and audio of 'Verklärte Nacht' at:
https://youtu.be/vqODySSxYpc

Translated as 'Transfigured Night', this string sextet is composed as a **tone poem** that **explores** the then taboo subject of pre-marital sex. Set to a poem from *Weib und Welt* ('Woman and World') by the modernist poet Richard Dehmel, Schönberg begins the work in D minor, stressing a tense situation to a final happy resolution in D major at the end where the man forgives his lover. Throughout the work, Schönberg's harmony and treatment of his themes caused the Viennese public to label it as 'indecent'.

The fundamental structure is that of a *rondo*, where 'A' expresses the narration of the poem (such as the theme in Figure 11.34), 'B' represents the woman's confession of her pregnancy and the 'C' section depicts the man's forgiveness and acceptance. What would this compare to today?

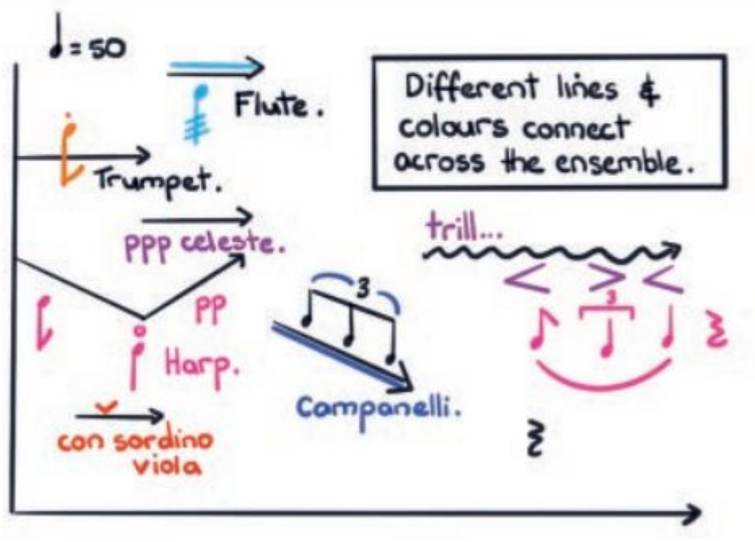
The topic was almost too much for Viennese audiences, but Schönberg structured his music around the poem beautifully. In your portfolio, referring to the two questions at the beginning, write a short response **using** the prompt: **I used to think… But now I think….**



■ **Figure 11.34** 'Walking in a garden at night' theme in doubled violas and cellos. The low D drone in each part is dramatic and expressive, then the rising hopeful theme enters at the end using ascending perfect intervals.

MINIATURES WITH A LARGE SOUND

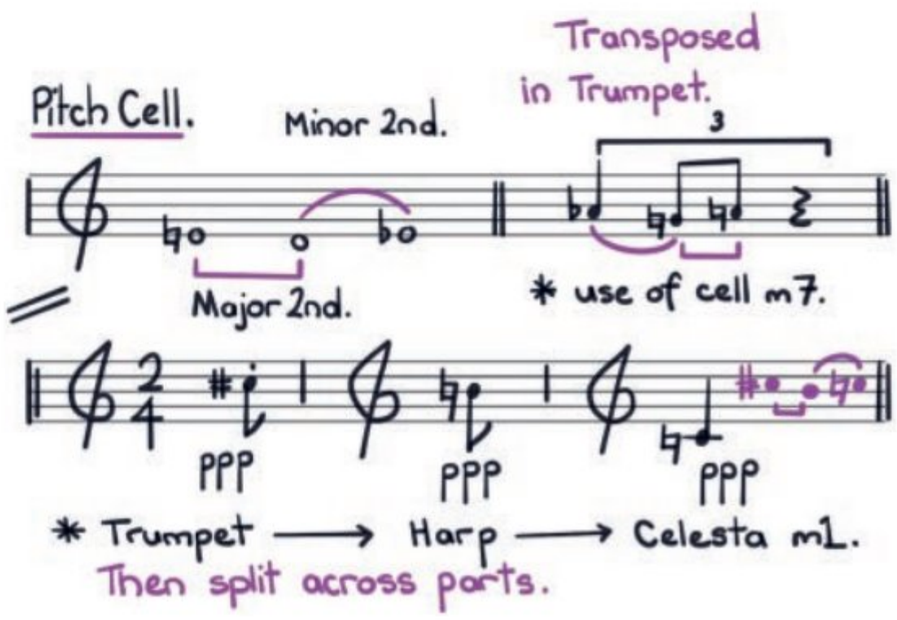
Anton Friedrich Wilhelm von Webern (1883–1945), was a student of Schönberg's and an important member of the Second Viennese school. His skill in composition involved building on Schönberg's 12-tone serialism, but also stripping back textures to focus on colours or sounds in miniature. This would often mean his works included very detailed instructions to performers, extreme dynamics and the use of extended instrumental techniques (for example *col legno*, which is hitting the strings with the bow). Webern would also take a melody and distribute the pitches of that melody to different instruments, essentially splitting the line between different timbres. This became known as *Klangfarbenmelodie* (literally: *sound-color-melody*).



■ **Figure 11.35** Improvised graphic showing instrumental colours of Webern's 'Five Pieces for Orchestra, Op. 10 movement 1'

These and other serial techniques are exemplified in his 1913 work 'Five Pieces for Orchestra, Op. 10'. Composed for an orchestra that includes guitar, mandolin and celeste, Webern treats the entire ensemble like a chamber group from the future!

Webern presents only the briefest of ideas before moving on, and each movement lasts between 30 seconds and 2 minutes.



■ **Figure 11.36** The cells of movement 1 use major and minor 2nd intervals

Listen and watch the work on YouTube with score here: **https://youtu.be/reqqQ-kBJQ0** or follow his handwritten score here: **www.themorgan.org/music/manuscript/115913** We will focus on creating and performing our own versions based upon movement 1 'Urbild. Sehr ruhig und zart'.

Hint

You could also investigate movement 4 'Erinnerung. Fließend, äußerst zart' and try to work out its melodic cell to create with them on your own.

ACTIVITY: Miniatures like Webern

ATL

- Collaboration skills: Exercising leadership and taking on a variety of roles within groups

1. **As a class, decide which instruments you have in the room. If you need to split into groups, make sure there are about 5–8 instruments in each group.**
2. **Webern's thematic material is developed from an alternating set of pitches called *cells* (a small group of notes using intervals of a 2nd).**
3. **In your class-instrument group, choose a pitch cell that you will play, in any octave and any rhythm of 3–4 notes.**
4. **Take turns playing and notating each other's cells to collectively decide on 5.**
5. **Notate each cell into an order of 1 to 5. Then, following the principle of a klangfarbenmelodie, play each note of the cells one after the other, in a line, almost like you are finishing off each other's sentences.**
6. **Perform your work as a group, making sure to include dynamics and expression. It should be less than 2 minutes in duration.**

Make a recording of your work, **develop** the **tone-colours** and you could even make an electronic ensemble version!

Assessment opportunities

In this activity you have practised skills that are assessed using Criterion B: Developing skills and Criterion D: Responding.

How might reliance upon a structure provide artistic freedom?



■ **Figure 11.37**

3-2-1 BRIDGE

Can you **create** music if you do not play an instrument? Have you ever thought: What is my creative process?

As you think on these questions, write into your portfolio: **3** thoughts or ideas that immediately come to mind, **2** questions that you still have and **1** analogy that you can come up with concerning 'the creative process'.

> *"I was surrounded by music," Mackey says, "but never had anything I could do with it, because I never had an instrument. But now I had a computer, which became my instrument."*

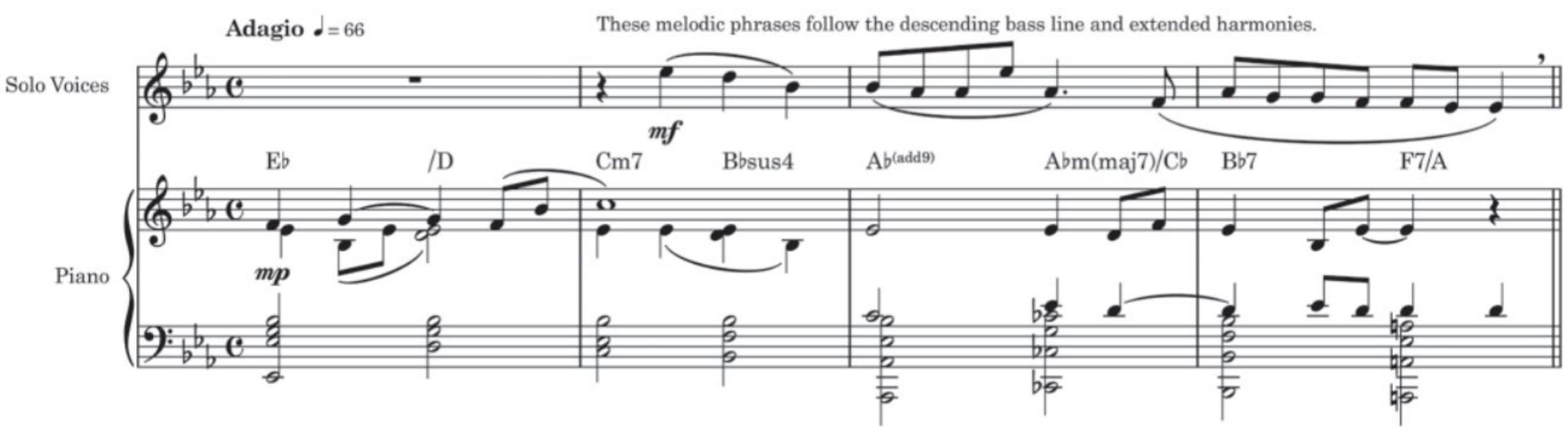
The music of John Mackey (**www.ostimusic.com**) has been of constant inspiration to schools, professional-level choirs, bands and orchestras. He is able to combine soaring melodies with rhythms, engaging both the players and audience in his music. John Mackey (b. 1973) recently did a series of interviews with publisher J.W. Pepper that you can watch here: **https://blogs.jwpepper.com/index.php/john-mackeys-unusual-path-to-composing-success**

Listen to two tracks by John Mackey on the playlist: *Sheltering Sky* and *This Cruel Moon* adapted from *Wine-Dark Sea: Symphony for Band*. Draw structural schematics of each work as a class, comparing your ideas and what you hear in the recordings.

Both works combine techniques brought over from the First and Second Viennese schools. Mackey uses *canons*, and a technique called *counterpoint* (different melodies occurring simultaneously). He even combines chromatic lines that at times we hear as clashing colours in different sections of the ensemble. The effect of his music is that we have a modern, expressive use of each section of the ensemble:

> *"If you're an architect and you are going to make a building, you don't start by picking out a really cool lamp. What you do is you ask, 'What's the purpose of this building? How big does it need to be? What's it made of?' and then you make the building. The last thing you do is pick out the furniture. The notes are the furniture."*
>
> *Composer John Mackey*

As you reflect, write into your portfolio once more: **three thoughts or ideas that you have learned**, **two questions that you still have** and **one analogy that you can build on** concerning 'your creative process'.
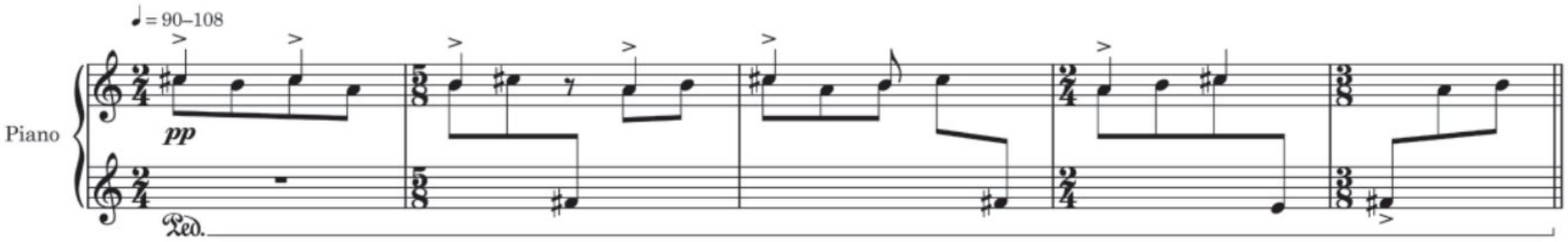


■ **Figure 11.38** *Sheltering Sky* excerpt courtesy of https://youtu.be/ed1yRpuqNaE. Notice the extended harmony and melodic use of chord tones.

NEW FORMS OF EXPRESSION
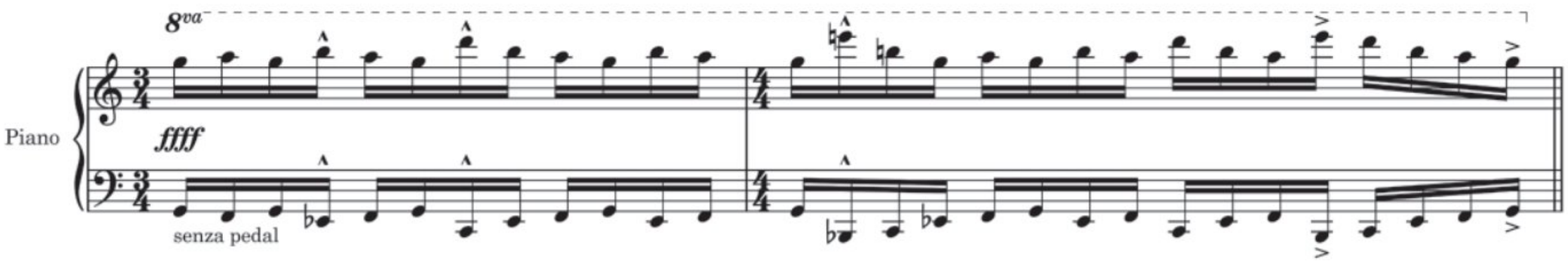
Thomas Adès is a composer whose works could be entered into a '21st Century school of expression'. Using his work for orchestra and five video screens entitled 'Polaris for Orchestra Op. 29' (2010), we will look at how ostinatos and instrumental colours have evolved into the 21st Century. See **www.fabermusic.com/repertoire/polaris-5537** or watch the live performance at the BBC Proms here: **https://youtu.be/bClkmv-kRP0**

> *"Underpinning his use of such spiral harmonies is Adès's belief that notes are pushed and pulled around by magnetic forces."*

The main theme is a spiralling pattern that uses the A major pentatonic scale of A-B-C#-E-F#. The theme presented in Figure 11.39 is treated *canonically*, which means it is layered over other parts. Adès disguises these canons by using motivic development.



■ **Figure 11.39** 'Polaris' spiralling piano motif in groupings of 12, 12, 123, 12, 12345...



■ **Figure 11.40** 'Polaris' theme in 16th notes (semi-quavers) and contrary motion, mm149–150

ACTIVITY: Polaris and Sheltering Sky

■ ATL

■ Communication skills: Sharing ideas with multiple audiences using a variety of digital environments and media

1. **Create an electronic template in SoundTrap, or a score template for five instruments in MuseScore.**
2. **Using acoustic sounds or devices, improvise a melodic theme using the A pentatonic scale with repeated notes.**
3. **Record it with at least one time-signature change.**
4. **Apply different methods of motivic development to augment (stretch the rhythm), diminute (shrink the rhythm), or retrograde (turn it backwards).**
5. **Layer the different versions over each other in canon.**

In your portfolio, reflect on this process and how your piece sounded.

◆ Assessment opportunities

In this activity you have practised skills that are assessed using Criterion A: Knowing and understanding and Criterion C: Thinking creatively.

Which innovations in music can lead to new schools of thought?

THE GLOBAL IMPACT OF GLOBAL MUSIC

'Resting with Angels' represents another example of the new 21st Century school of expression.

> *"Resting angels may be right beside me*
>
> *Resting angels may be here with me."*

Ella Macens (**www.ellamacens.com**) is a current artist and composer in Sydney, Australia. You can listen to her work on Soundcloud here:
https://soundcloud.com/ella-macens/resting-with-angels-for-string-quartet

The piece was originally composed for the Goldner String Quartet in conjunction with the Sydney Conservatorium of Music's National Women Composers' Development Program (2016–2017).

> *"'Resting with Angels' was inspired by the music of Latvian composer Pēteris Vasks … His music is often deeply connected to nature, and voices concern regarding the current state of humanity and the wider world…"*
>
> *Ella Macens*

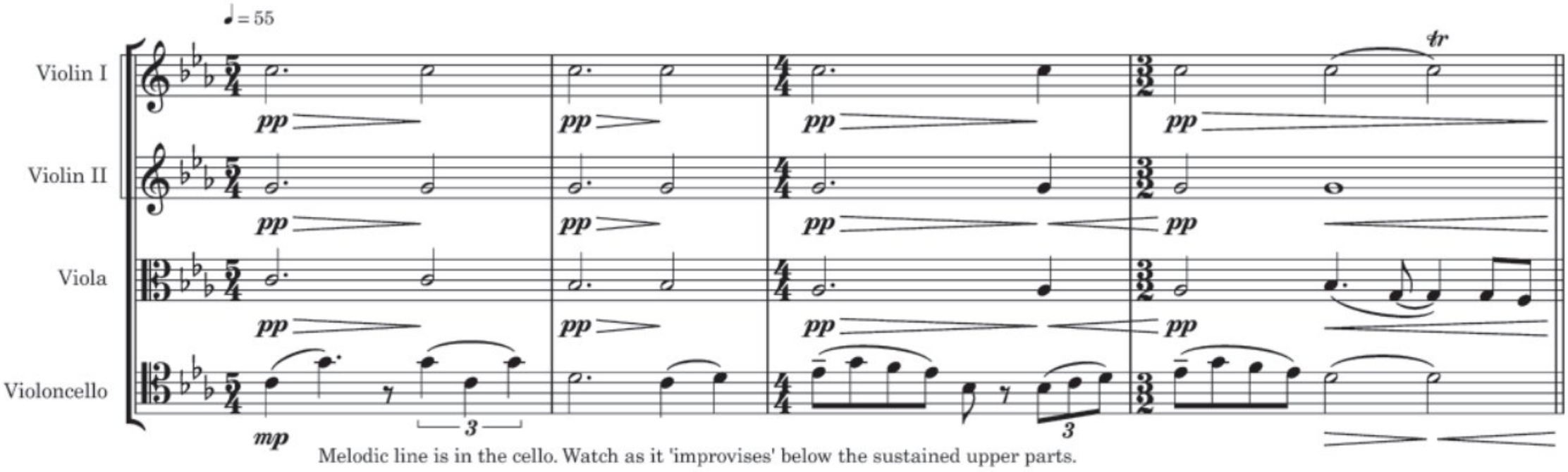


■ **Figure 11.41** Ella Macens. Photograph by Darwin Gomez.

WHAT MAKES YOU SAY THAT?

Macens' musical approach can be pictured alongside John Mackey's architectural analogy. As you listen to the work, imagine the detailed planning that would have gone into each phrase to get it 'sounding' like a meditation. Spend time listening to the work on Soundcloud to pick out particular sections that you can use to answer the following:

1. **What is happening within the ensemble rhythmically? Or melodically?**
2. **What do you hear that makes you think this is a modern, expressive work?**



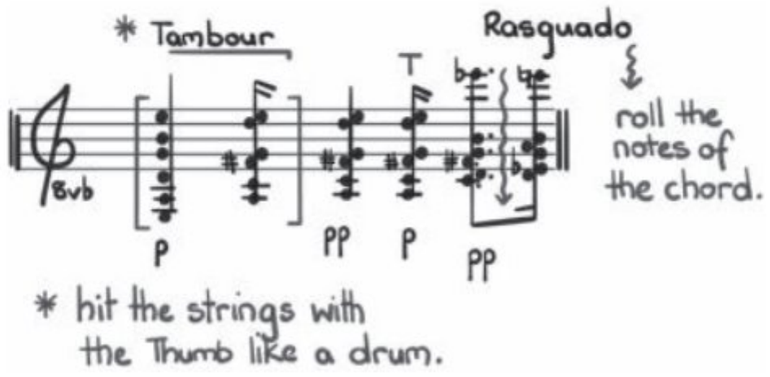
■ **Figure 11.42** 'Resting with Angels' theme mm16–19

Portfolio presentation

Experimenting with Berio No. 3

Sequenza No. XI for guitar is the focus of this exploration, and the sounds that you can get from a guitar fit the description. How many techniques do you know of when writing for guitar? In the very opening of his score, Berio hits the guitar (T, *tambour*) for a percussive sound!

Berio creates a series of colours with a *violente* (violent) strumming technique derived from flamenco called *rasguado*. You can watch the score online here: **https://youtu.be/WCK9BHBH9QA** and see it performed live here: **https://youtu.be/qVNuchg0gkQ**. Reflect on which technique you could now create with, or how you could compose a percussive piece for guitar using Flamenco dance rhythms! See **www.castano-flamenco.com/en/courses/zapateado-notation**
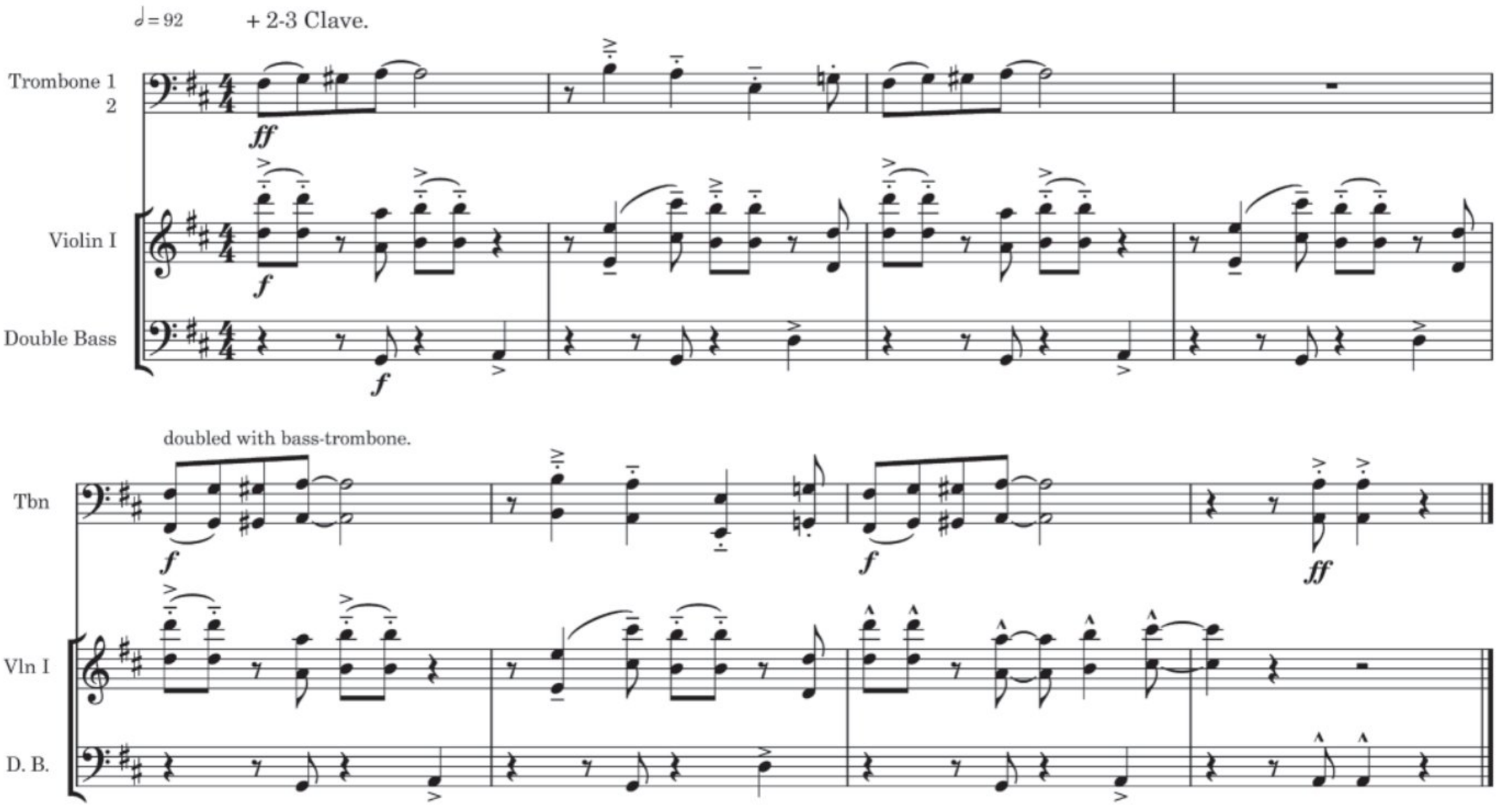


■ **Figure 11.43** Opening guitar *Sequenza* transcription

"I don't believe in writing in a vacuum."

Daniel Rojas is a composer, performer and educator. As our world becomes more globally connected, artists are bringing together music from diverse folk and popular traditions to enrich their 'voice'. Rojas does exactly this with the rhythms, harmonies and expressive qualities found in Latin American music. Born to Chilean and Peruvian parents, he comments that he always knew he would end up creating a new medium:

> *"I was always interested in …, Latin American folk music that extended from Peruvian folk music to Argentinian folk music, Tango, Afro-Cuban music…"*

With his *Piano Concerto No. 1*, Rojas has created a three-movement work that bridges the Romantic era with its piano rhapsodies, the 20th Century's fascination with rhythm and jazz, to a new work of global energy and expression; energy derived from the rhythms of three particular dances, the montuno, valse and alegrías, and expression derived from the harmony of composers such as George Gershwin and Rachmaninov.



■ **Figure 11.44** *Montuno* pattern with brass melody, from *Movement 1* of the Rojas Piano Concerto



■ **Figure 11.45**

ACTIVITY: Rojas' piano concerto

■ ATL

■ Organisation skills: Setting goals that are challenging and realistic. Understanding and using sensory learning preferences (learning styles)

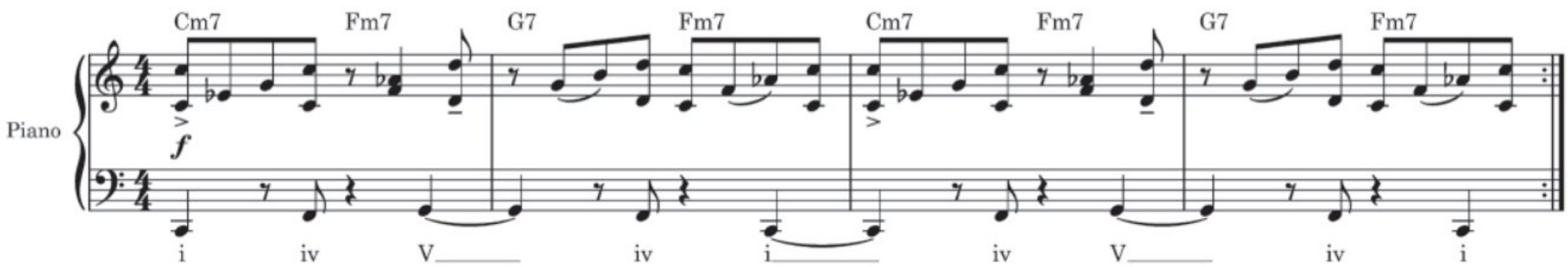
Watch Daniel Rojas perform each movement with the Willoughby Symphony Orchestra, conducted by Simon Kenway in Sydney, Australia at **https://danielrojas.com.au/watch-and-listen**. As you listen, make active listening notes on the techniques and patterns that you hear. This activity will require more time and practice, but as you can see in the videos, the energy is incredible!

1 **Using the example for the montuno below, practise playing the right-hand rhythm on a piano, keyboard or device. Always count and clap the rhythms first.**
2 **Begin to introduce chromatic notes or even chord progressions.**
3 **The left-hand or bass part is called the *tumbao*, and it comes from Afro-Cuban music. Essentially, the bass line follows this rhythm, outlining the I-V chord progression or arpeggio.**
4 **Now based upon the montuno skills you have, notate the C minor progression into a program like MuseScore and add your own melody. (The example of Rojas' brass melody from *Movement 1* is given in Figure 11.44.)**
5 **As a final orchestration step, split the parts of the montuno, and your melody, into a string quartet arrangement. Who will play the top line? Who will play the bottom *tumbao* line? Copy and paste the lines in, or record it, and see if your creation expresses the same energy and vitality.**

The more advanced skills of rehearsing a concept, then applying it, and further changing it again into a new ensemble, is at the heart of what it means to be a musician. You are transferring and discussing ideas that are found in trap to jazz and pop.

◆ Assessment opportunities

In this activity you have practised skills that are assessed using Criterion A: Knowing and understanding and Criterion B: Developing skills.



■ **Figure 11.46** When playing Latin music, the *montuno* is the broken chords (arpeggios on top), while the *tumbao* is the root and fifth in the bottom layer. (You can also go back and use the activity from Chapter 5.)

Is the future school of music a global blend of tradition and modernism?

LOOKING TO THE FUTURE

"'Magic with Everyday Objects' is a piece on the verge of a nervous breakdown, in which the 'everyday' building blocks of music are turned upside-down."

Composer notes

Missy Mazzoli (b. 1980) is a composer who has blurred the lines between that which is considered classical or traditional, with electronic, vibrant textures. First listen to 'Magic with Everyday Objects' on the playlist or recorded live on YouTube at **https://youtu.be/6yzJapL8DIk**, and then do the following activity.
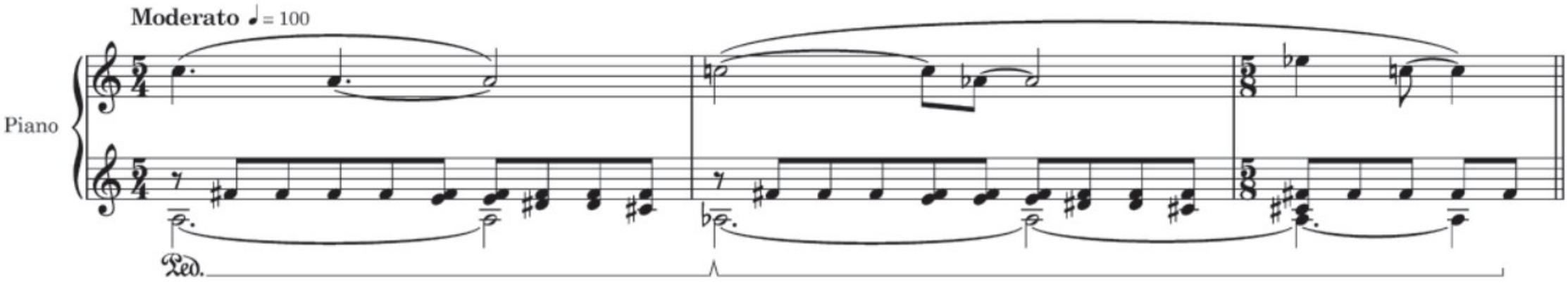
TUG OF WAR

Brainstorm answers in your portfolio to the following provocations:

1. **The Mozart problem: Most audiences believe there to be definable 'classical' music or 'high art' music. But has this changed with the inclusion of technology in performance?**
2. **Tug of war: Identify the two sides of the question: What is the 'classical' music of now? Is it electronic, acoustic or a blend of both?**
3. **Stating your case: Research the 'tugs', or reasons, you support your point of view. Can you think of any counter-arguments to your position?**
4. **What if? If you could define the future of concert music in the world, what would it look like to you?**

Mazzoli uses **triads**, repeated rhythmic phrases, time-signature changes, chromatic melodies and dissonances that lead the audience to ask: What will happen next? She creates music that interacts with people, and this is a feature of the *new music* in our time. Regardless of style or influence, music is designed to engage with and speak to the listener.

"I write for classical instruments, I write for orchestras, but I'm also very much influenced by indie rock…"



■ **Figure 11.47** Opening of 'Magic with Everyday Objects' (2007)

Listening strategically: Get an IDEA

Moog Synth plus Piano

In a video posted to **www.moogmusic.com/media/sarah-schachner-aurora-aura**, video-game, television and film-score composer Sarah Schachner performs 'Aurora Aura' live on both electronic and acoustic instruments.

"When I'm writing and producing, my space always seems to end up in total disarray with instruments scattered all over the furniture and floor. I like a bit of chaos during the creative process."

As you watch her performance, consider the changes outlined in this chapter; not just changes in media and production, but also of technique, expression and musical devices such as motivic development. In your portfolio, create a structural diagram that outlines at least three detailed points analysing Schachner's performance. Remember to use the acronym **IDEA** as a means of building on your answers and evaluating live performances.

Gabriel Prokofiev is a composer who demonstrates creativity with both acoustic and electronic media. His work *Cello Multitracks* sets a live cellist against the playback of eight separately recorded parts by Peter Gregson. This means that the sounds are planned, motivically developed and already recorded and rehearsed through software. This is a vital distinction because it gives the composer time to experiment with extended techniques, and audition what they sound like against each other.



Figure 11.48 Multi-tracking in a DAW such as *Logic Pro X* using an external sound source

ACTIVITY: Electronic Prokofiev

ATL

- Organisation skills: Selecting and using technology effectively and productively

Listen to Prokofiev's fourth movement entitled 'Tuff Strum' at his Bandcamp site here: https://gabrielprokofiev.bandcamp.com/album/cello-multitracks

1 a **What can you identify melodically from the first two phrases?**
 b **The tape begins playing when the percussive hits on the cello can be heard. Pizzicato phrases, at first in rhythmic unison, are played over the top. What rhythmic effect does this create?**
 c **Has Prokofiev used loops in his composition? Or can you identify a different process than copying and pasting repeating measures?**

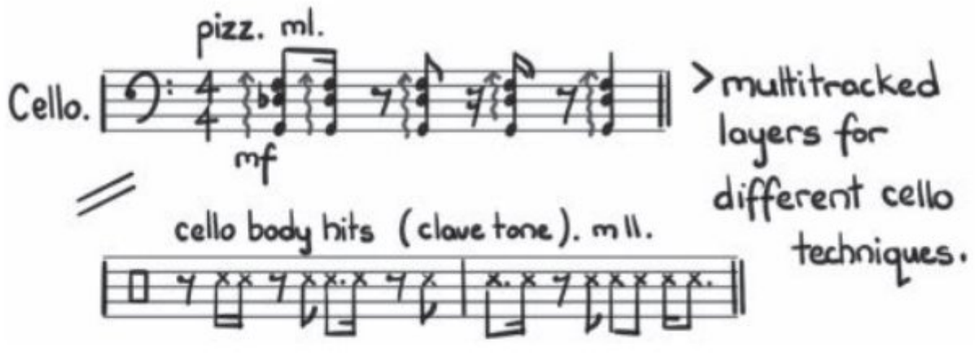


Figure 11.49 'Tuff Strum' excerpts (m1 and m11)

How can you multi-track?

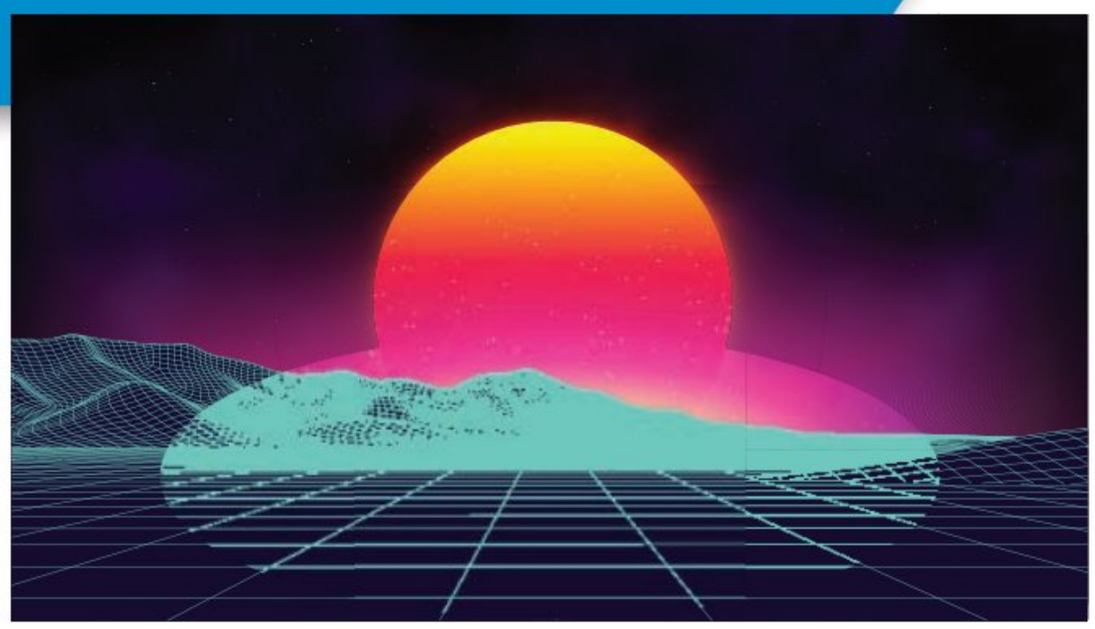
Using GarageBand or SoundTrap we are going to do the same!

2 a **Use an instrument that you are familiar with and begin sketching or playing a series of phrases in a single key (C minor or C major, for example).**
 b **Notate and / or draw each phrase into your portfolio, until you have eight different ideas that you can confidently play into software. (Rehearsing these to a metronome will speed up the process.)**
 c **Set the tempo of your software with a metronome click that is played through your headphones. (This avoids you recording the click into each track.)**
 d **Now record and listen to each take until you have eight separate recordings on eight separate tracks. This is where you can edit or add effects to your ideas.**
 e **Play your final work to a friend and write down their feedback on a how each layer combines with the others and b your use of melodic and rhythmic material.**

Assessment opportunities

In this activity you have practised skills that are assessed using Criterion A: Knowing and understanding and Criterion B: Developing skills.

Is change in music inevitable?



■ **Figure 11.50**

Reflection

In this chapter we have **explored** works from 1700 to the current Century. It is now possible to form a *hypothesis* of how music has changed, *define* those changes and even *describe* them in the music we listen to today. Most importantly, you will have found many artists and their ideas *repeat* throughout history, spiralling outwards with new technologies and previous techniques. As you learn to *discuss* different types of music, *examine* your own creative process and the ideas of those we build on. Change in music is inevitable, but what new ideas can you bring that *distinguish* you from other artists?

Portfolio presentation

Documenting and sharing

Keeping in line with all the activities, ideas and explorations opposite, use the concepts discussed in this chapter to approach new music with an inquiring mind. We all build on the techniques of the past, adding new ideas and ways of expressing ourselves. The future of music creation, production or performance could one day involve you!

SOME SUMMATIVE OPTIONS TO TRY

Use these ideas to apply and extend your learning from this chapter. These problems can be assessed using any of the suggested strands above the summative activities. The presentation and portfolio requirements are given after the description.

THIS TASK CAN BE USED TO EVALUATE YOUR LEARNING IN CRITERION A AND CRITERION D (ALL STRANDS).

SUMMATIVE 1

In this task, your role is that of a time traveller. You are coming back to our time to tell us what the music of the future sounds like. How will you do this? What examples will you give? Can you research patterns now, which have been '**developed**' in the future, based on examples from previous eras?

Furthermore, can you predict what technology will add to music in the next decade? Can you provide examples of the change technology has had on music now, to back up your claims?

If change in music is inevitable, imagine what forms of expression could be possible in ten years!

Presentation and portfolio

Everything here is a creative experiment. Where you take your argument is up to you. Research your own musical tastes, analyse examples you find inspiring and **present** a blueprint based upon your research that points to what the future could look like:

1. **Include ideas from the musical schools mentioned in this chapter.**
2. **Draw parallels between past composers and current musical styles.**
3. **Provide analysis and structural maps of works you analyse in your presentation.**

Will the future sound like Berio, or electronic-Berio? Will it all be music by Mackey or Mazzoli? Or will it be artists multi-tracking samples?

THIS TASK CAN BE USED TO EVALUATE YOUR LEARNING IN CRITERION A, CRITERION B AND CRITERION C (ALL STRANDS).

SUMMATIVE 2

In this task, your role will be that of live performer who has been asked to stage a performance of Luciano Berio's lost work 'Sequenza XV: _____' (you name the work).

In this work, it calls for a performance that **explores** the sound capabilities of _____ with themes that are **developed** and expressed through phrasing, harmonic progressions and acoustic and/or electronic sound-sources. For example:

1. **The work explores the sound capabilities of *the electric bass* with themes that are developed and expressed using *Schönberg's 12-tone* serial technique.**
2. **The work explores the sound capabilities of *string quartet plus synthesiser* with themes that are developed and expressed through *ostinato multi-tracking*.**
3. **The work explores the sound capabilities of *the bass clarinet* with themes that are developed and expressed using techniques of *motivic development on a theme of Stormzy*.**

Presentation and portfolio

Depending on the media you choose to perform with, **create** a series of a sketches in notation by hand or in software. Then research the technical qualities of performing with this media. You will need to **present** a roadmap of your ideas before you perform the final piece.

Present the score and / or studio tracks with your final submission.

Use this table to reflect on your own learning in this chapter.

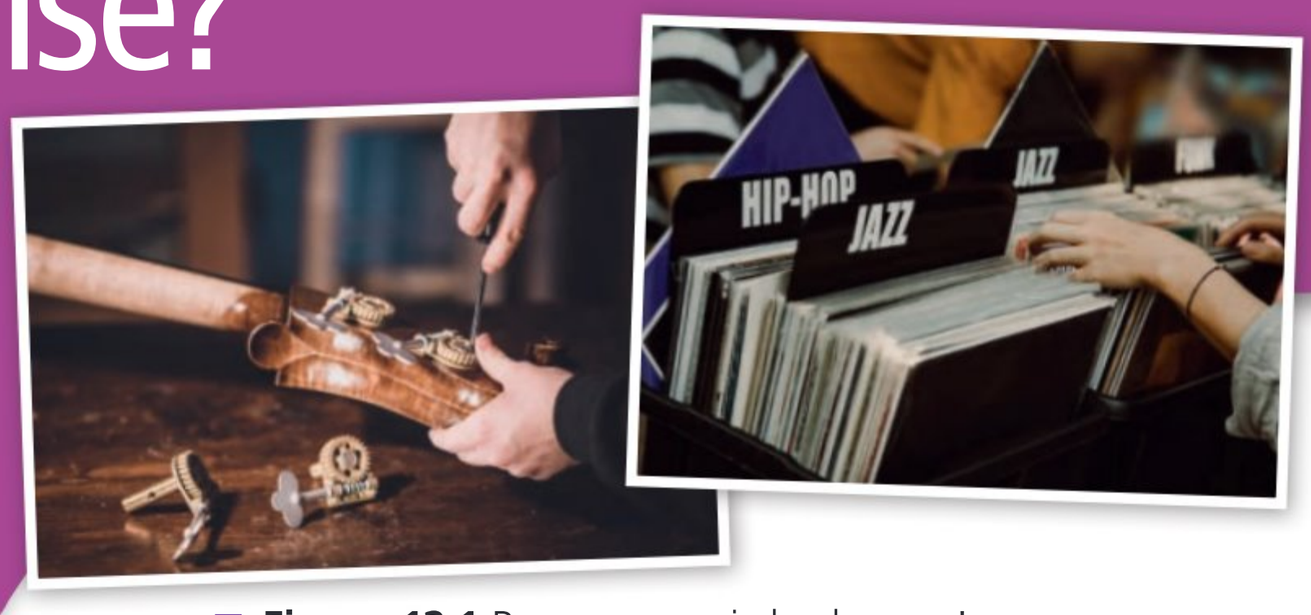
Questions we asked	Answers we found	Any further questions now?
Factual: What are the Mannheim and Viennese schools? What is a 12-tone matrix? What is the Russian school of music? What is *Klangfarbenmelodie*?		
Conceptual: How did the 20th Century establish change in the world of music? Which innovations in music can lead to new schools of thought? How does motivic development contribute to the DNA of an artist's style? How is change reflected within artistic expression?		
Debatable: Is change in music inevitable? How might reliance upon a structure provide artistic freedom? Is the future school of music a global blend of tradition and modernism?		

Approaches to learning you used in this chapter:	Description – what new skills did you learn?	How well did you master the skills?			
		Novice	Learner	Practitioner	Expert
Communication skills					
Collaboration skills					
Organisation skills					
Reflection skills					
Creative thinking skills					

Learner profile attribute	Reflect on the importance of being inquisitive for our learning in this chapter.
Inquirers	

12 To what extent is Jazz actually Baroque music in disguise?

Deconstructing the **relationships** between ideas in the music of others allows us to reframe our own **aesthetic** **interpretations**.



■ **Figure 12.1** Baroque music broken up!

CONSIDER THESE QUESTIONS:

Factual: What is a concerto? What is a contrafact?

Conceptual: How is harmony a structural element of Jazz and Baroque music? How can Baroque compositional techniques inspire new works? How do musical clichés lead to the reframing of musical ideas? How do 'variations on a theme' promote new forms of interpretation? What role does repetition play in identifying structure in music? How can improvisation be approached as a form of creativity and interpretation?

Debatable: Would composers in 1600 have used the harmony and rhythm of jazz? Are contrafacts really composing original works? Is there a purpose to the analysis and imitation of past works?

Now **share and compare** your thoughts and ideas with your partner, or with the whole class.

IN THIS CHAPTER, WE WILL…

- **Find out** who the composers of the Baroque era were, why they are important and just how their music connects to that of jazz in the 20th and 21st Centuries.
- **Explore** different dances and orchestral, vocal and band works with the aim of dissecting them to understand what glues them together. Then, using our ears we will look for those same discoveries in swing jazz, bebop, fusion and lo-fi genres.
- **Take action** by thinking like a scientist. By approaching different musical styles from the angle of an observer, we will analyse, create, perform and experiment with new ideas that will enhance our own skills.

■ These Approaches to Learning (ATL) skills will be useful…

- Organisation skills
- Information literacy skills
- Critical thinking skills
- Creative thinking skills
- Transfer skills

◆ Assessment opportunities in this chapter:

- Criterion A: Knowing and understanding
- Criterion B: Developing skills
- Criterion C: Thinking creatively
- Criterion D: Responding

We will reflect on this learner profile attribute…

- Open minded: We critically appreciate our own cultures and personal histories, as well as the values and traditions of others. We seek and evaluate a range of points of view, and we are willing to grow from the experience.

KEY WORDS

diatonic
basso continuo
tutti
concerto
concertino
ripieno
circle of fifths
sequence
progression
bass line
fugue
imitation
canon
contrafact
intervals
collective improvisation

Links to: Language; Arts; Literature Studies; Mathematics

Connections can be made between History, Languages and Literature and the idea of a musical *contrafact*, formulating your own remakes of Homer's *Odyssey* (like Virgil's *Aeneid*, or Joyce's *Ulysses*), editing stories of Robin Hood to a modern context, Shakespeare's *The Tempest* into *The Forbidden Planet* or even tragi-comedies from real-life events. With Mathematics, you can connect algebraic-type formulas to predictive models for AI music 'that works'. You can also use data analysis to collect styles from early jazz to hip-hop and neo-soul, collating either Baroque or jazz-like features that you observe.

Prior knowledge

This chapter works on the premise of including all levels of learners. However, having gone through previous chapters you should already know:

- how to play and work with scales, modes, chords, bass lines, riffs, rhythms and progressions; the next step will be how you compare and then contrast these to other works referenced in the chapter.
- how to play, identify and analyse rhythms aurally, from notation and in performance
- how to work collaboratively to express musical ideas with, voice, instruments and forms of technology, including recording and performing live
- what working within an ensemble means for balance and intonation, but also communication and expression
- ways of analysing music using pitch, duration, texture, structure, tone-colour, dynamics and expressive techniques to document the fingerprints of different styles.
- how to approach experimenting and presenting musical ideas from research and analytical listening, including reading from scores and annotated examples.

Examples, links and referenced materials will guide you further.

Listening strategically: Get an IDEA

'Honeysuckle Rose'

As you listen to the works suggested in this chapter, create a continuous mind-map of their similarities and differences. This will establish a foundation for your investigations, and it will give us a deeper understanding of the underlying building blocks that connect Jazz to Baroque-style performances.

Hint

You could create a giant Venn diagram as a class.

This listening example presents the jazz standard 'Honeysuckle Rose', written by Thomas (Fats) Waller and performed by Jane Monheit (b. 1977). As you listen to this piece, use the acronym **IDEA** (**identify**, **describe**, **explain** and **analyse**) to create a structural diagram outlining the musical components you identify in each section. For example, Section A could start with the double-bass solo and vocal melody, then the ascending 8th notes (**quavers**) in the bass could signal the start of Section B.

Hint

Add as much musical detail to your analysis as you can by researching the terms walking bass and ii-V-I jazz progression.

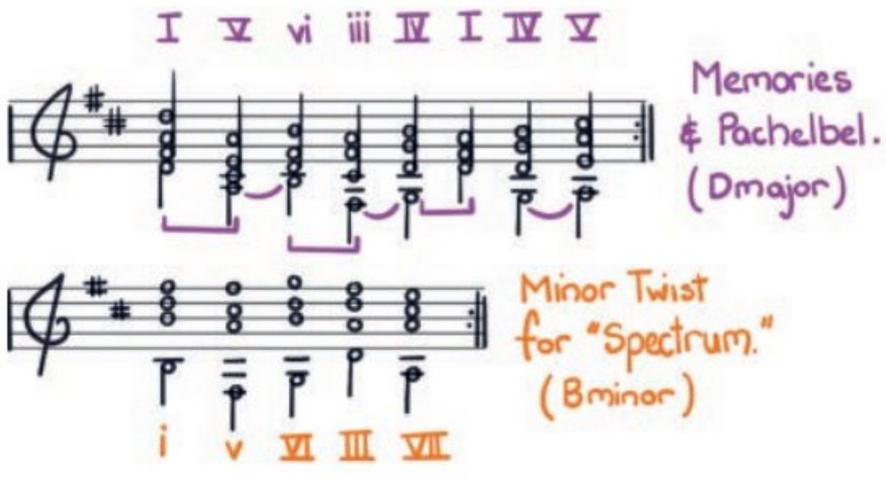
COMPASS POINTS

In beginning this journey, it is essential to establish the connections that we will **explore**, and how we can investigate whether Jazz is truly 'Baroque music in disguise'. In your portfolio, set aside a blank page that lists the four points of a compass (East, West, North and South), then take a moment of reflection to answer the following prompts by yourself:

- **E is Excited. What excites you about this investigation and comparison?**
- **W is Worrisome. What do you find worrisome about this intended comparison?**
- **N is Need to know. What do you think you will need to understand for this investigation? What additional information will help you to evaluate such different styles of music?**
- **S is Stance. What is your current stance or opinion on the idea of Jazz being Baroque music in disguise? How might you test or evaluate this idea?**

Jazz, in its many interpretations, relies on harmony for direction, rhythm and the structure it supplies for players to improvise over. Therefore, one of the most basic connections we can investigate is how both Baroque and contemporary artists use **chords** to structure their works.

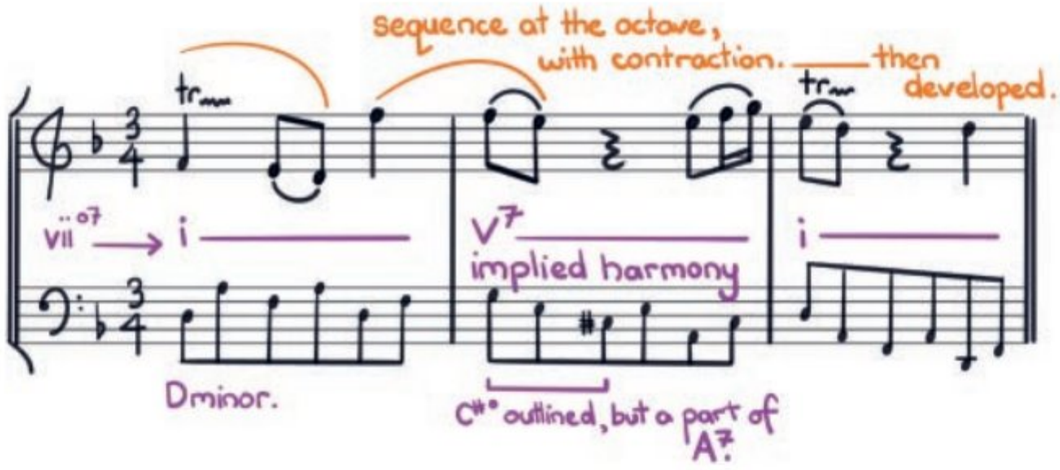
1 **Chord progressions: Listen to Maroon 5's 2019 track 'Memories' or the chorus of 'Spectrum' by Florence and the Machine. In both examples you should recognise the familiar chord progression of Johann Pachelbel's (1653–1706) 'Canon and Gigue for 3 violins and Basso Continuo' in D major.**



■ **Figure 12.2** Pachelbel's progression sketched out as I(D)-V(A)-vi(Bm)-iii(F#m)-IV(G)-I(D)-IV(G)-V(A) with 'Memories' (D major) and 'Spectrum' (B minor)

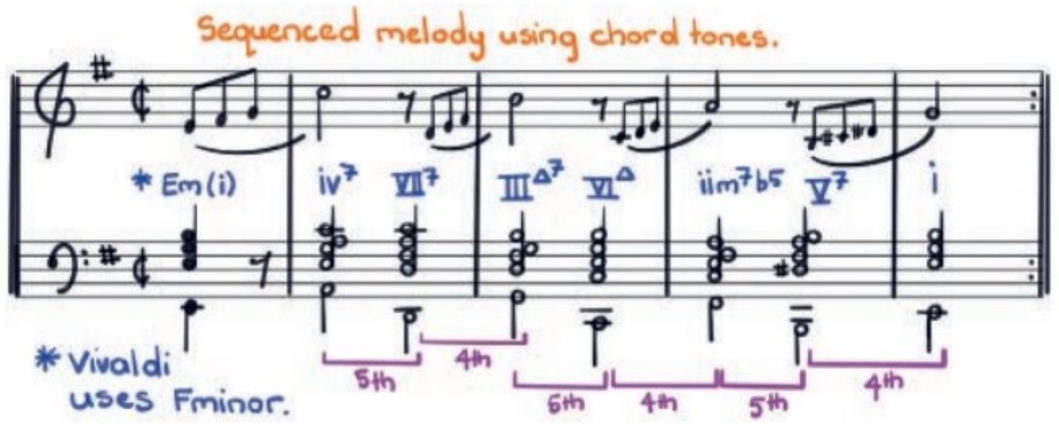
These, and other works like them, utilise a chord pattern that allows melodies and countermelodies to be built on top.

2 **Chords by bass: Johann Sebastian Bach (1685–1750) is known as a master of the Baroque era. He would create melodic themes that developed and grew over diatonic chord progressions (chords that followed the key / scale formulas), and bass lines. One such progression uses the chords of a clear V(A)-i(Dm) in his *Brandenburg Concerto No. 2 BWV 1047*.**
The repetition of this short progression leads back to chord 'i' thanks to the clear bass line provided by the harpsichord and viola da gamba (together known as the *basso continuo*):



■ **Figure 12.3** Bach's 'Andante' from *Brandenburg Concerto No. 2 in F BWV 1047* mm3–5

3 **Chords by interval leaps: We then arrive at the *circle of fifths* chord sequence. This is a concept that relates to the bass line, but where a series of chords leaps in intervals of 4ths or 5ths. From Antonio Vivaldi's (1678–1741) 'Winter' *tutti* theme (approximately 1'10 into the track on the playlist), J.S. Bach's *Brandenburg Concerto No. 2 in F BWV 1047 1.* Allegro (approximately 1'22 into the track on the playlist) and the 1945 jazz standard 'Autumn Leaves' by Joseph Kosma, all follow the same sequence.**



■ **Figure 12.4** 'Autumn Leaves' follows the exact chord sequence of I-iv7-VII7-III∆7-VI∆7-iim7b5-V7-i as Vivaldi's *The Four Seasons* (*Le quattro stagioni*) 'Winter' (1725)

Listen to each of these examples as a class and add to your compass points any new points of view that you discover. Besides harmony, what other musical features do these examples share?

What role does repetition play in identifying structure in music?



■ **Figure 12.5**

REPETITION IS AN OLD FRIEND

As you interact with the next three examples, have your portfolio open to note down your ideas and discuss them with a partner:

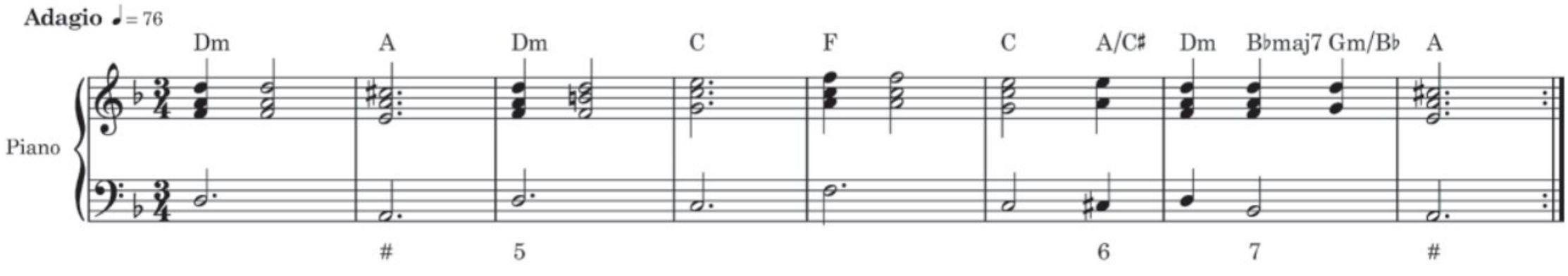
1 What is being presented as evidence for repetition? and
2 What do you see as structural elements?

From the work songs of America c. 1860, to ragtime piano in 1900, the development of swing in the 1920s and bebop in the 1940s, the chords I-IV-V have led to a standard pattern of performance called the *12-bar blues*. These 12 measures have been used by artists to build songs on an essential structure of cyclical repetition. Artists such as Robert Johnson, Louis Armstrong, Nina Simone, Jimi Hendrix, Led Zeppelin and B.B. King have all played and interpreted this pattern in their own way. You can hear B.B. King's 'Why I Sing the Blues' on the playlist as you follow along with Figure 12.6.

C (I7)	C (I7)	C (I7)	C (I7)	F7 (IV7)	F7 (IV7)
C (I7)	C (I7)	G7 (V7)	F7 (IV7)	C (I7)	G7 (V7)

■ **Figure 12.6** *Blues* chord structure (12 bars); notice how the I7 and V7 begin or end each phrase

However, the reliance on a repetitive chord pattern is not new. There are similar song structures in the early Baroque era with which many composers experimented. In Chapter 3, we saw that composer and master of the violin Arcangelo Corelli (1653–1713) used a 16-bar form in his 'Violin Sonata Op. 5' called 'La Folia'. It consisted of a minor theme that is repeated and developed as a structure for showing off technical performance skills. Listen to Corelli's 'Violin Sonata in D Minor, Op. 5 No. 12 La Follia Variations' on the playlist as you follow Figure 12.7.



■ **Figure 12.7** 'Follia' chord structure (16 bars) – still outlines a V-i pattern in each phrase

ACTIVITY: Baroque bass as Jazz?

ATL

- Transfer skills: Combining knowledge, understanding and skills to create products or solutions

1. Tarquinio Merula's 'Ciaccona a Tre' (1637), performed by Il Giardino Armonico, is a brilliant example of the ground bass principle. Listen to the recording on the playlist, and create a mind-map describing what happens in the top violin parts over the bass each 4–8 measures.
2. The next example is for your own performance and improvisation in class. The 'Ciaccona' ('Chaconne') is by Andrea Falconieri (1585–1656), and the recording is taken from *Il Spiritillo Brando: Dance Music in the Courts of Italy and Spain*. Use the notated excerpt below to create your own improvisation over the bass line using G melodic minor (G A B♭ C D E F# G).

Hint

Be careful of the **rhythm** in measures 2 and 6 as they include a hemiola that feels like a triplet.

a. Play or record the bass line to a metronome set to 6/4.
b. Make sure you double the bass line with another instrument or device.
c. **Loop** the recording, or take turns improvising as a group, where you play the notes of G melodic minor (1 ♭2 3 4 5 6 7) over the repeated ***ground bass***.

Assessment opportunities

In this activity you have practised skills that are assessed using Criterion A: Knowing and understanding and Criterion B: Developing skills.

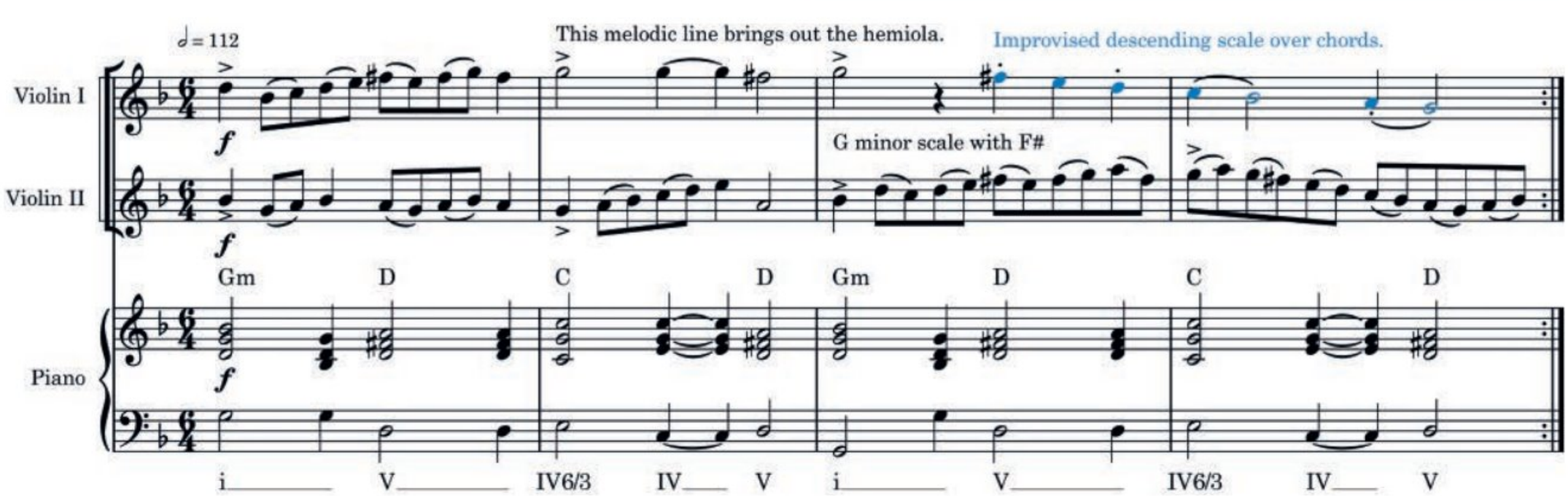


Figure 12.8 'Ciaccona' by Falconieri: Try to sing the bass line and perform the work with the hemiola feel



■ **Figure 12.9** Viola da Gamba instrument used as the bass line in the basso continuo

The Baroque era stretched from around 1600 to 1750, with many musical devices and structures carried over in Jazz, Soul and Hip Hop. One glaring example is the emphasis on the bass line as a repetitive structure.

A *chaconne* (or *ciaccona*) is a type of musical composition popular in the Baroque era because it gave the *continuo* (harpsichord or bass instrument such as a viola da gamba) a repeated line to unify the work. Known as the *ground bass*, it was used as a vehicle for compositional variation.

WHAT MAKES YOU SAY THAT?

This leads us to a question:

If the Baroque folia has 16 measures, and the blues has 12 measures, and they both return to a I or V chord, what could be added or altered in the future? Surely the structure has been set?

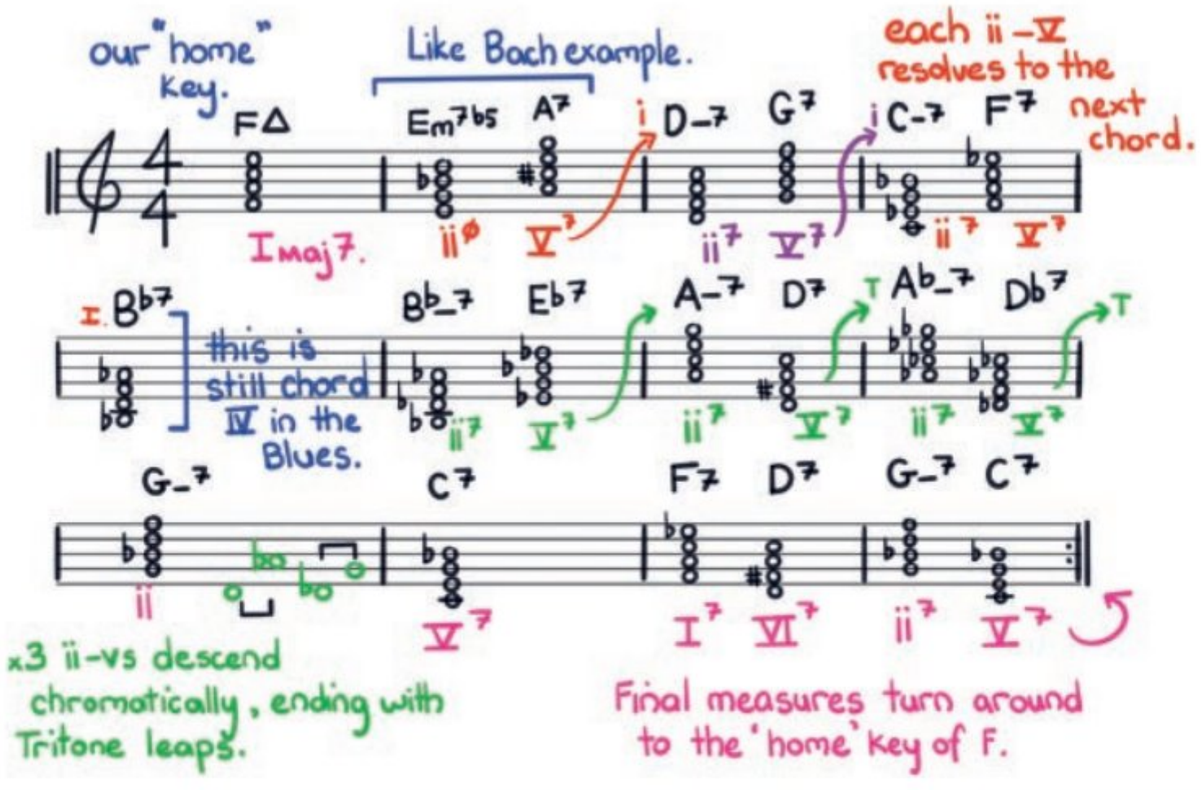
Time for a the ii-V-I and b substitution:

As you listen to the track 'Blues for Alice' by Charlie Parker (1951) on the playlist, you will notice there seems to be an **extension**, or substitution, of almost every chord from the 12-bar blues pattern! These changes are known as the *bird changes* and they include:

1. **reliance on a strong bass line over which the piano *comps* (plays syncopated chord voicings)**
2. **the replacing of one chord in a measure, with the ii and V from its 'own' key (measures 2-3-4)**
3. **chords substituted for their tritone replacements (remember intervals), (measure 8).**

There are many examples by Charlie Parker that are great models for studying the connection between bass, chords and substitutions.

Once you have listened to 'Blues for Alice', try to play these chord structures on your instrument or device. Learning the changes above will give you the chance to interpret them for yourself.



■ **Figure 12.10** 'Blues for Alice' with the harmonic progression broken down.

How do 'variations on a theme' promote new forms of interpretation?



A DIFFERENCE OF STYLE AND RHYTHM

Composed by J.S. Bach towards the end of his life, 'The Art of Fugue BWV 1080' outlines Bach's strength for writing themes that he would then incorporate in different rhythmic and melodic transformations. We know this from the last chapter as **motivic development**. Each consecutive **movement** is based on a theme that consists of the three notes of a D minor chord and its scale. Bach 'improvises in notation' a complete set of fugues around a single melodic idea.

> *"A fugue is a musical form that involves canonic imitation in multiple parts … it is a* polyphonic *composition that is structured around the simultaneous performance of more than one melody."*
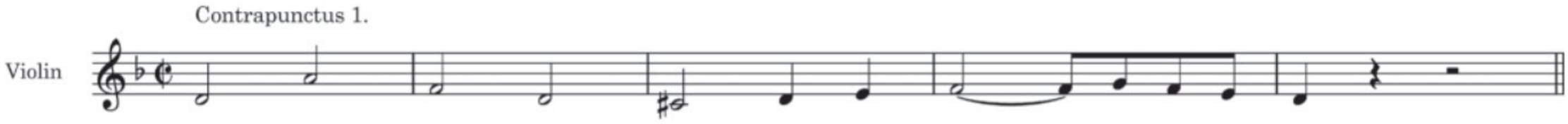
■ **Figure 12.11**

SEE–THINK–WONDER

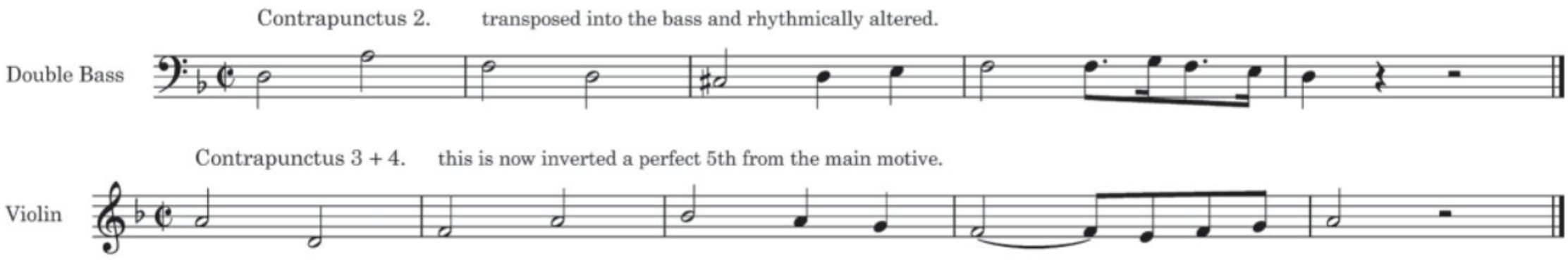
Create three headings as below and answer the questions in your portfolio. Listen to the four examples of 'The Art of Fugue' as performed by The Emerson String Quartet on the playlist.

1. **What do you notice about the themes in each movement?**
2. **What do you think about the way Bach transforms them?**
3. **What does it make you wonder about the connection we are making to jazz?**

Explore this site: **http://theconversation.com/decoding-the-music-masterpieces-bachs-the-art-of-fugue-73522** to listen to other variations on Bach's theme as we examine jazz works that take the same approach.



■ **Figure 12.12** 'The Art of Fugue BWV 1080' monothematic idea



■ **Figure 12.13** 'The Art of Fugue' themes from Contrapunctus 2, 3 and 4

Chick Corea (b. 1941) is a jazz keyboardist and composer who wrote the work 'Spain' for the 1972 album *Light as a Feather*. As a class, listen to the work and its original inspiration *Concierto de Aranjuez* on the playlist to create a detailed listening map of the work.

> *"At the time I was in love with Miles's [Davis]* Sketches of Spain*… On that record Gil has this fantastic arrangement – it's the second movement of Joaquin Rodrigo's 'Concierto de Aranjuez'. I fooled around with that theme, extended it and composed some melodies, which turned out to be the main themes of 'Spain'. I always play Rodrigo's second movement as [my] keyboard intro."*

Corea uses the Rodrigo theme as the basis for his composition, establishing the harmonic structure, while adding extended chords on top. This leads, as he says, to a transformation of the theme around an F# **Phrygian** scale passage, as seen in Figure 12.14.

ACTIVITY: Chick Corea's 'Spain'

ATL

- Transfer skills: Combining knowledge, understanding and skills to create products or solutions

1. **In your class, perform the section of Chick Corea's 'Spain' transcribed below by clapping the rhythms in the top 7 measures.**
2. **Now experiment playing the two chords of G major and F#major, alternating between them as a partner uses the rhythms to make up their own F# Phrygian melody.**
3. **Finally, rehearse playing the ii-V-I chords in a loop by practising the left and then right-hand shapes slowly.**

Assessment opportunities

In this activity you have practised skills that are assessed using Criterion A: Knowing and understanding and Criterion B: Developing skills.
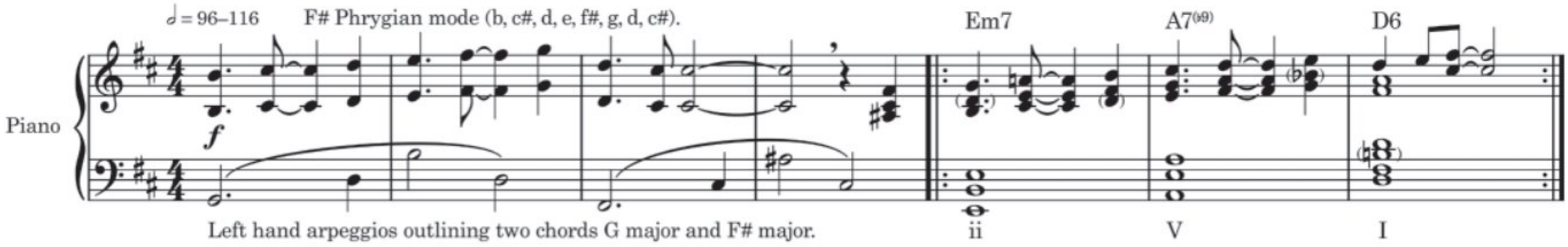


Figure 12.14 'Spain' transcription showing ii-V-I chord sequence and bracketed extension notes

Listening strategically: Get an IDEA

St Matthew Passion

Listen to J.S. Bach's sacred oratorio *St Matthew Passion BWV 244* (1727) and analyse parts in your portfolio. Look to identify any of the features we have discussed, from the use of the bass and any descending lines to the circle of 5ths or repeated instrumental lines. Comment using the acronym **IDEA** and listen in particular for the choral echo of 'Sehet – Wen? – den bräutigam, sehet ihn – Wie? – als wie ein Lamm' ('Behold – Whom? – the bridegroom [Jesus], Behold him – How? – as a lamb).



Figure 12.15

ACTIVITY: Line clichés (part 1)

ATL

- Information literacy skills: Making connections between various sources of information

A *line cliché* is a stepwise ascending or descending line that connects a chord progression; most often using the bass line. Examples include the *James Bond* theme by Monty Norman (b. 1928), *Feeling Good* by Nina Simone (1933–2003) or 'Blue Skies' by Irving Berlin (1888–1989). Listen to these three pieces on the playlist and **identify** which line is being performed in Figure 12.16.

The power of a jazz line cliché can be found reaching back into the Renaissance and Baroque eras under a different name: the *lament bass*. Listen to Antonio Vivaldi's motet 'O qui coeli terraeque serenitas RV 631, Aria No. 2', and Claudio Monteverdi's 'Lamento della ninfa' to compare with the jazz examples.

Create a diagram in your portfolio that illustrates the similarities and differences between the three jazz-based examples and two Baroque arias. Then perform the line cliché from Monterverdi's *Lamento della ninfa*, improvising / creating your own melody on top **using** the 'A' natural minor scale.

In the **presented** Baroque works, how often do you notice that a melodic phrase, or an entire section, is repeated? What does this do in maintaining interest within the work?

Assessment opportunities

In this activity you have practised skills that are assessed using Criterion A: Knowing and understanding and Criterion D: Responding.
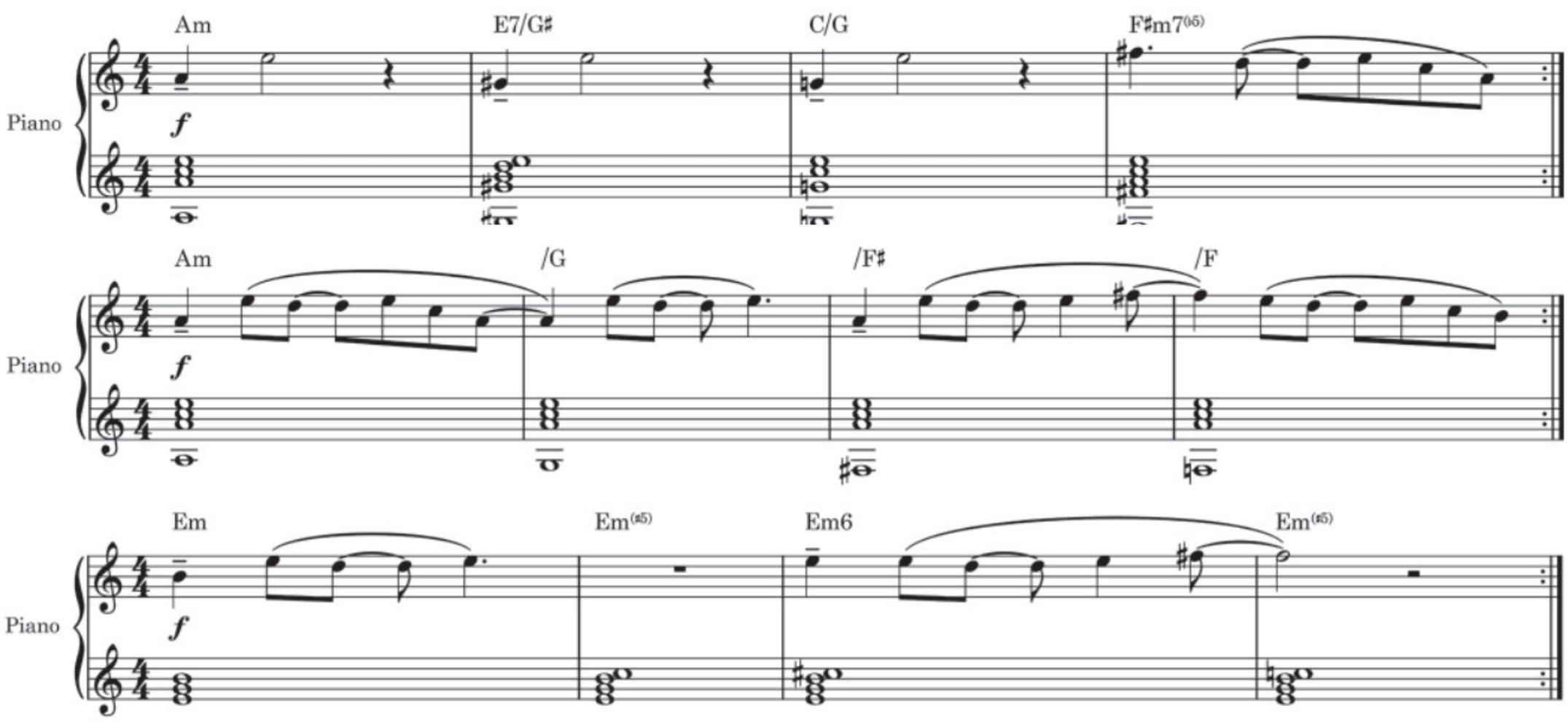


Figure 12.16 Three line cliché examples to choose from
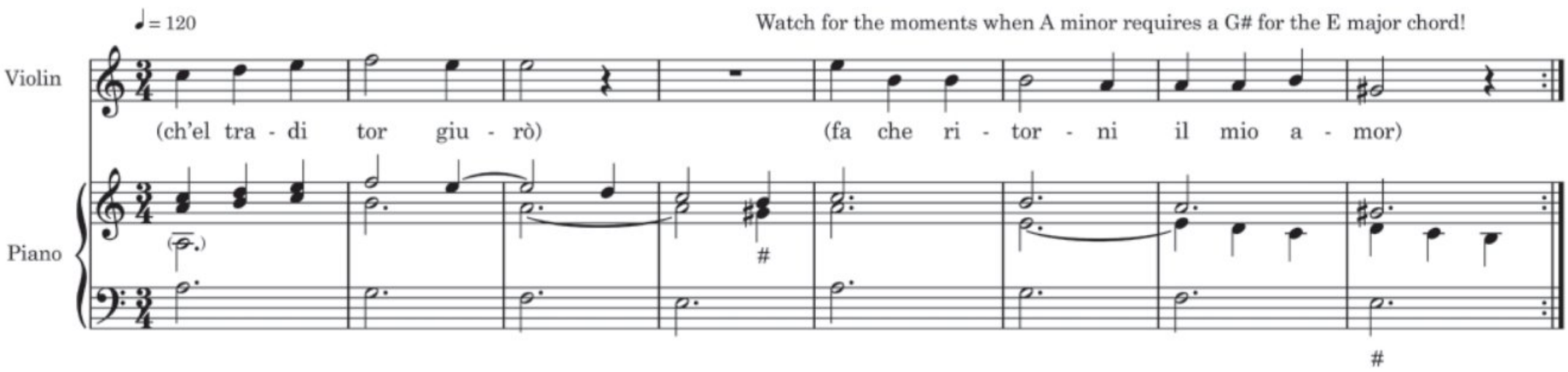


Figure 12.17 Monterverdi's bass line descending underneath A minor for you to perform over

What is a contrafact?

CREATIVE BORROWING

'How High the Moon' is a jazz standard written by Morgan Lewis and recorded in 1940. The version listed with this book is performed by jazz artist extraordinaire Ella Fitzgerald (1917–1996).

As jazz is a *performance art*, we will develop our listening even further with this interpretation. Lady Ella's version begins with the 1940 *homophonic* version (melody and chord accompaniment), then it adds a vocal improvisation (a technique called *scat*), with a special reworking of the tune into the Bebop version made famous by Charlie Parker.

■ **Figure 12.18** 'How High the Moon' chord changes with ornithology melody as scat

Listening strategically: Get an IDEA

How High the Moon

Listen to the recording and create a structural diagram of the performance, analysing what you can hear using **IDEA**. The following questions will help you target specific musical features of Lady Ella's performance:

1 A *jazz standard* or *jazz chart* normally includes an A section (with the main melody) and a B section (second melodic phrase or improvisation section). How many sections can you divide this performance into?

2 The melody is the main vocal line; however, it is written to repeat and move in what we call a *sequence*. Can you identify and describe *which* direction the melody is stepping? Can you also identify *when* the pattern changes?

3 Whenever a sustained note is sung by Lady Ella, she sings a note called a guide tone. A *guide tone* is the 3rd or 7th degree of the scale, as represented by the name of a chord, for example the first chord is G major 7, so the melody sustains a 'B,' which is the 3rd degree of G major (G A **B** C D E F# G). Using Ella's Scat example, can you label the guide tones that the melody uses?

It is important to note that the chord progression of 'How High the Moon' uses a series of smaller ii-V-I progressions leading directly into the next chord in Figure 12.18. This is a structural fingerprint of jazz.

On a piano or device, play through groups of the chords notated above. Listen to each as a stack of notes on your instrument or device. Then, taking turns, play the 3rd or 7th of each chord and hold them over the harmony. You should practise this technique of targeting guide tones because it will assist you greatly in improvising.

◆ Assessment opportunities

In this activity you have practised skills that are assessed using Criterion B: Developing skills and Criterion D: Responding.

Music exploration: Contrafacts

"Creativity in its most basic form is simply the act of taking something old and making it new…"

JazzAdvice.com

Bebop jazz in 1940 was a style of rapid development, reflected in the fast tempos, extended chord progressions, fast scale-like improvisations and syncopated works of Charlie Parker (1920–1955), Dizzy Gillespie (1917–1993) and John Coltrane (1926–1967). Musically, bebop had much in common with the dances of Bach's Orchestral Suites or other Baroque forms that jazz artists such as Charles Mingus (1922–1979) would later build on. However, a unique device of bebop jazz-ers was to take an existing tune and write over the top of it.

"For the greatest improvisers, the contrafact was a way to explore a new harmonic, melodic, or rhythmic concept – to instantaneously stick with tradition and move it forward."

Contrafactum is the term for a Medieval-era process of applying new texts to older melodies. A *contrafact* in jazz involves the process of creating a new melodic composition over the progression to a pre-existing one. This process is made simpler when the original work has a *binary* AB or *ternary* ABA structure. The artist creating the contrafact often replaces the melody with one of their own, and then reharmonises the chords with extensions and ii-V substitutions.

1 Open your portfolio and brainstorm all the musical patterns you can identify in Sarah Vaughan's rendition of 'All the Things You Are'. The first example is a slow string number, then the second is a big-band swing production. What musical comparisons can you describe in:
 - **a** how the melody or harmony is expressed?
 - **b** how the works are structured around the instrumental playing and vocal lines?
2 Complete your brainstorming of ideas by sharing and discussing your responses.
3 Now contrast your findings to Charlie Parker's 'Bird of Paradise' on the playlist. This number is a contrafact of the tune 'All the Things You Are'. It adds a new introduction that steps by a semitone (half-step) between D♭ and C, and then as soon as the improvised sections begin, you can hear the same chord changes as 'All the Things You Are'. As a class:
 - **a** Play the introduction as pictured in Figure 12.19 on your instruments. .
 - **b** What do you notice about the direction of the trumpet line? Is it playing guide tones?

Hint

How do you work out the 3rd of a chord?

 - **c** What do you notice about the rhythm of the saxophone line and its sustained notes?
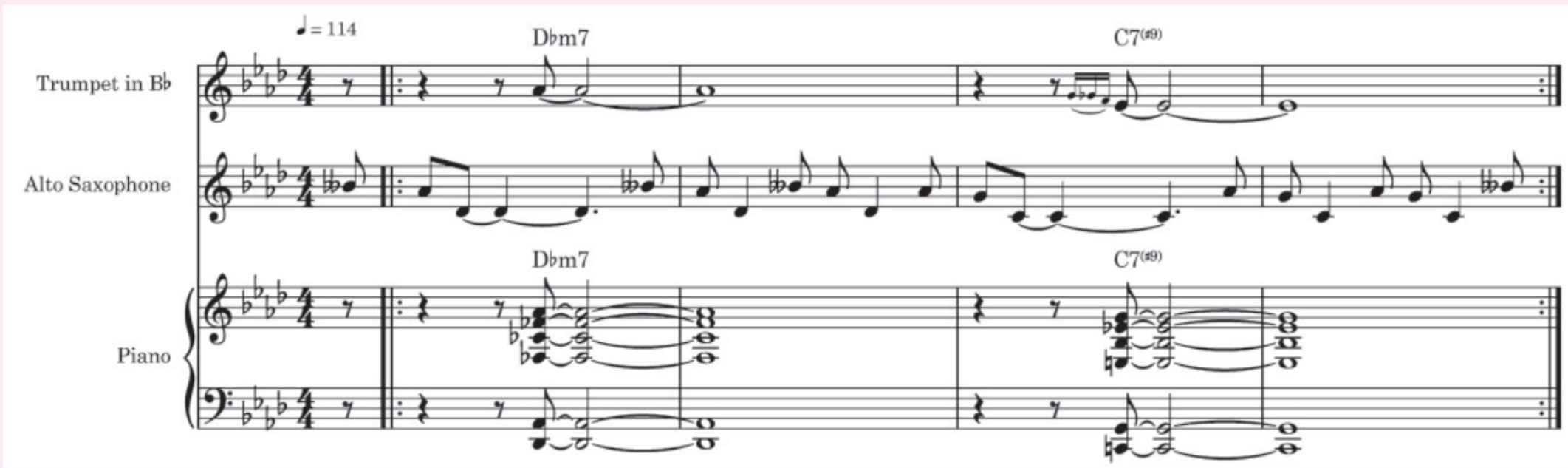


Figure 12.19 'Bird of Paradise' introduction transcription for performance and analysis; the trumpet and alto saxophone are in concert pitch

What is a concerto?

QUESTION STARTS

What does it mean *to improvise*? What are the thought processes, or techniques needed to **create** a solo?

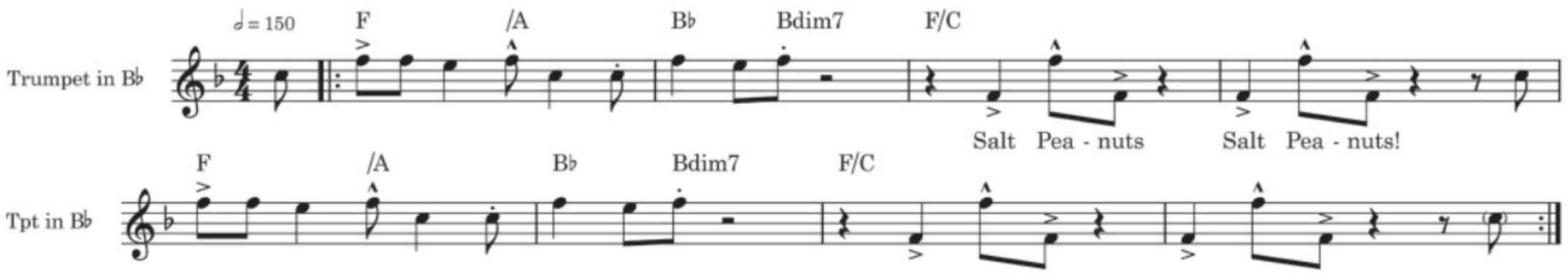
1 **In groups, brainstorm a list of at least 12 questions related to the jazz idea of *improvisation*. Use these question starters to help you think of more detailed and deeper questions: Why…? What would happen if…? Suppose that…? What if Baroque musicians…? What if we knew what the performers knew…? What is the purpose of improvising…? Can it be written down?**

2 **Review the brainstormed list and select one or more questions to discuss as a group.**

Before you finish your discussion, turn to the playlist and listen to trumpeter Dizzy Gillespie's bebop number 'Salt Peanuts'. This track has a characteristic refrain of *Salt Peanuts* based around the interval of an octave. The tune is also a contrafact of Gershwin's song 'I Got Rhythm', with the same 32-bar AABA structure and harmony.

Listen for each instrument's solo from approximately 1'20 and describe the shape and rhythm of their playing: **a** piano, **b** saxophone, **c** trumpet, **d** drums.

3 **Reflect: What new ideas do you have about the topic of *improvisation* that you didn't have before?**



■ **Figure 12.20** 'Salt Peanuts' transcription with trumpet at concert pitch

THE CONNECTIONS OF RHYTHM, HARMONY AND MELODY

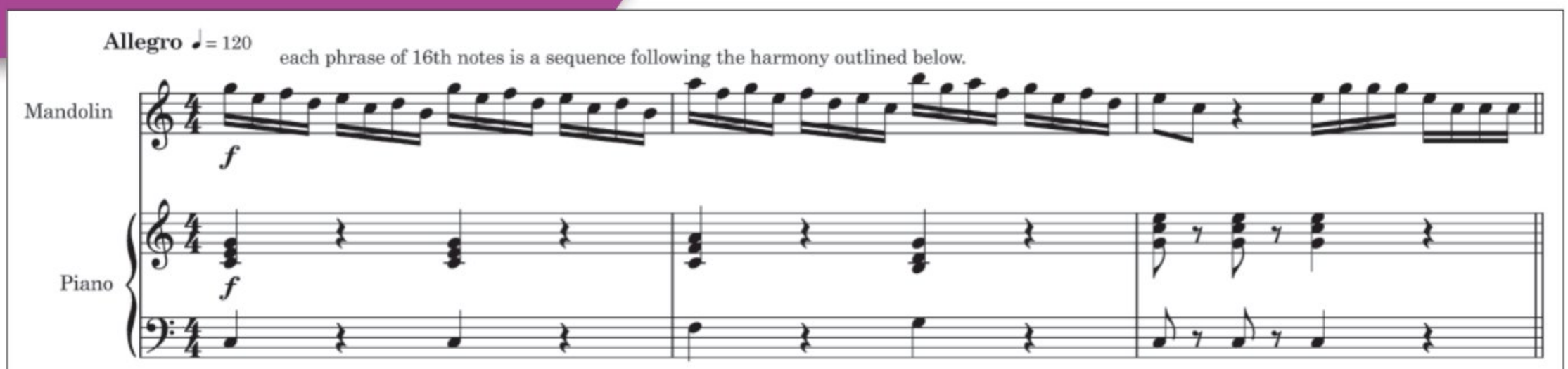
The **concerto** became a foundational feature of solo works during the Baroque era of the 17th Century, most notably in the solo concerti of Antonio Vivaldi for mandolin or lute. Watch the first movement of Vivaldi's 'Mandolin Concerto in C major, RV 425', written in 1725, as performed by mandolinist Avi Avital (b. 1978) on YouTube: **https://youtu.be/aXBWrNN64z8**



■ **Figure 12.21** Avi Avital and mandolin

Vivaldi established the concerto principle of a solo instrument taking turns to *improvise* against a collective group of instruments called the *ripieno* (an Italian cooking term for 'stuffing'). If an instrument were to perform as a soloist, the composition was called a *solo concerto*. If there were more than one soloist, it was called a *concerto grosso*. Then underneath these sections of soloist and 'stuffing' was the *basso continuo* (viola da gamba and harpsichord) providing the rhythmic and harmonic foundation. This is not dissimilar from a typical jazz ensemble with a bass, piano and drum kit acting as the backline to the frontline soloists.

In Vivaldi's concertos, the emphasis was placed on the importance of the soloist, with the *ripieno* and *basso continuo* supporting them.



■ **Figure 12.22** First mandolin solo over continuo mm11–13 with harmony of I-IV-V

As you listen to Vivaldi's 'Mandolin Concerto in C major, RV 425', you should start to hear the following elements:

1. Repeated melodic lines that use sequences (the same, just repeated higher or lower)
2. Clear phrases that are organised according to rhythm and a harmony of I-IV-V
3. The circle of 5ths being reused in different phrases throughout the work.

ACTIVITY: The concertino principle

■ ATL

■ Creative thinking skills: Focusing on the process of creating by imitating the work of others

This activity takes an Afro-Cuban style of music known as *Cha Cha Cha* and transforms Vivaldi with it. This Cuban piece has distinct percussion layers, as well as even balanced phrases in C major: perfect for our transformation!

1. **Watch the performance on YouTube at https://youtu.be/F9NvDAR6rrI and follow the melodic phrasing in Figure 12.23. The bass also moves in a predictive manner between chords I-V.**
2. **Open your notation software to create a template for piano (our ripieno stuffing) and double bass (our continuo).**
3. **Enter the double bass part using the notes of chords I (C)-V (G) while following a similar phrasing pattern to Figure 12.23.**
4. **Using Vivaldi's mandolin theme in 16th notes (semi-quavers), enter them into the right hand of the piano and vary the rhythm.**
5. **Next, experiment with adding half-note chords (minims) on C and G in each measure with some extensions. Then use the bass line to add movement.**

You can then research conga and guiro rhythms to turn Vivaldi's 1725 Mandolin Concerto into a Latin–jazz number.

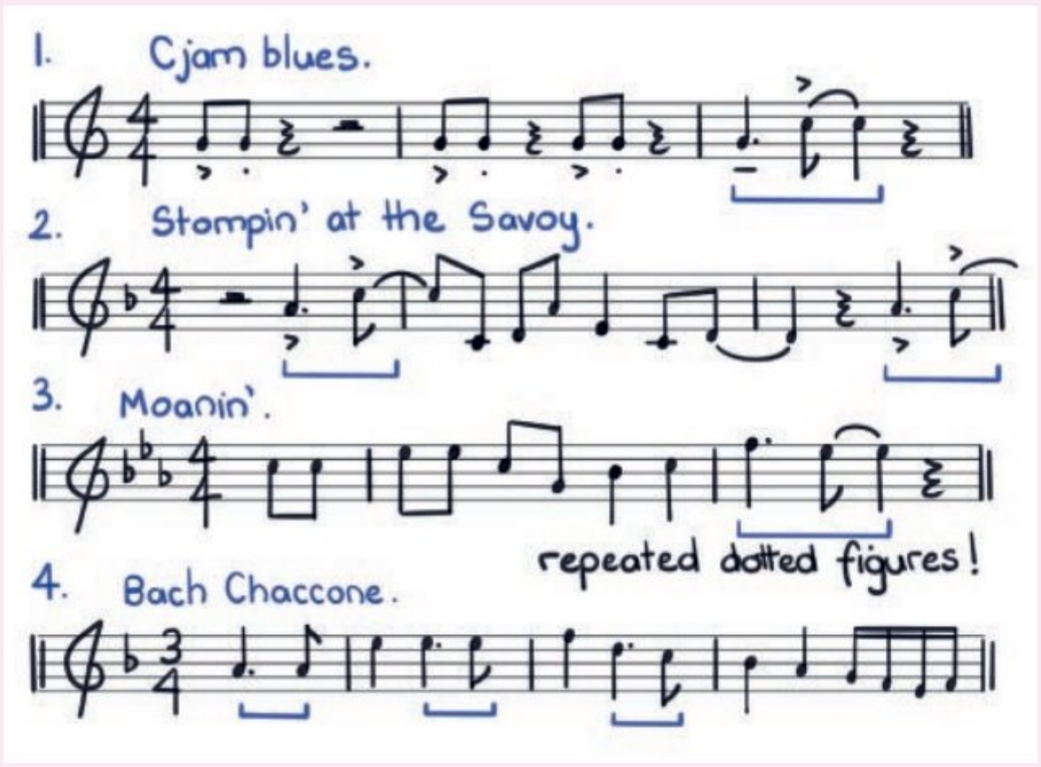
◆ Assessment opportunities

In this activity you have practised skills that are assessed using Criterion C: Thinking creatively and Criterion D: Responding.
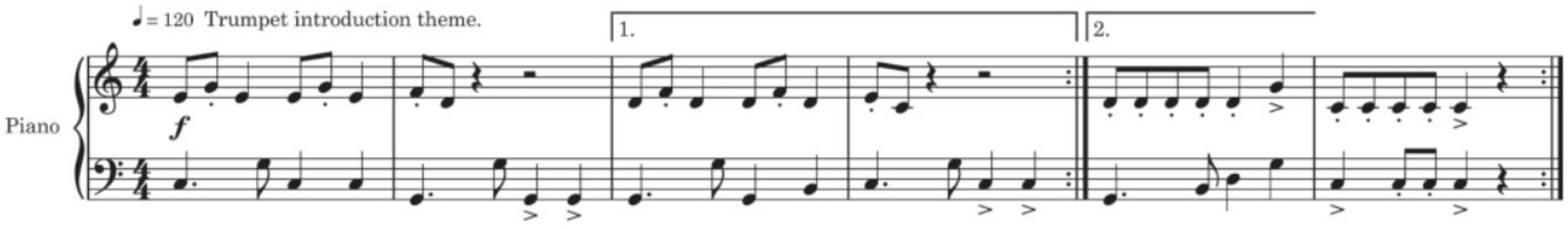
Music exploration: Jazz rhythms

Rhythm in jazz is a stylistic feature that derives from different patterns and grooves from around the world. From the essential dotted-note featured in Baroque dances to the swinging 8th notes (quavers) of popular jazz standards, it is important to be able to recognise and notate these patterns. You could even combine them in your own creative tasks and improvisations.

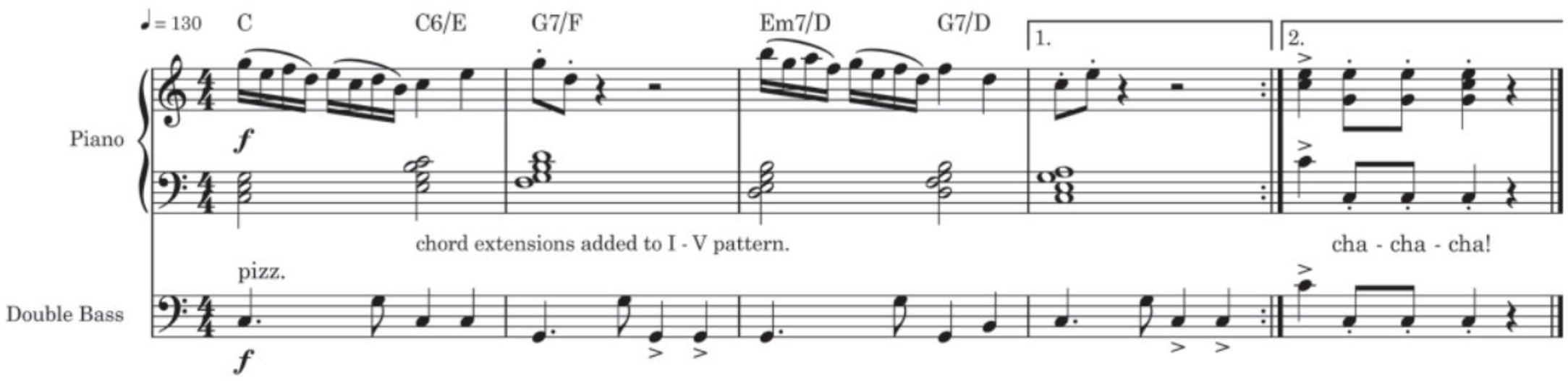
Add these to your portfolio and listen to the works mentioned on the playlist. Perform these patterns as a class using body percussion and then combine them to develop repeating **ostinatos** or grooves.



■ **Figure 12.25** Rhythms in jazz that show a unique recurring pattern similar to Baroque melodies



■ **Figure 12.23** Arrangement in C major of Cha-Cha-Cha performance, Cuba 2012



■ **Figure 12.24** Vivaldi RV425 transformed with elements of Cha-Cha-Cha in MuseScore

How can Baroque compositional techniques inspire new works?

A CONVERSATION ABOUT CANONS

From the 16th to the 17th Century, vocal and then instrumental music would make use of a technique called a **canon**. The device known as a *catch* or a **round** describes one voice entering, singing its line, while another voice would enter halfway through, as if chasing it; never to meet until the final **cadence** point. You might have sung examples of canons such as the folk tune 'Frère Jacques' or even Thomas Tallis' (1505–1585) 'Glory to thee, my God, this Night', performed here on the viol family of instruments common to the early Baroque era:
https://youtu.be/bYJ8SneHfT4

> *"a musical canon is… a set of guidelines for having a musical conversation"*
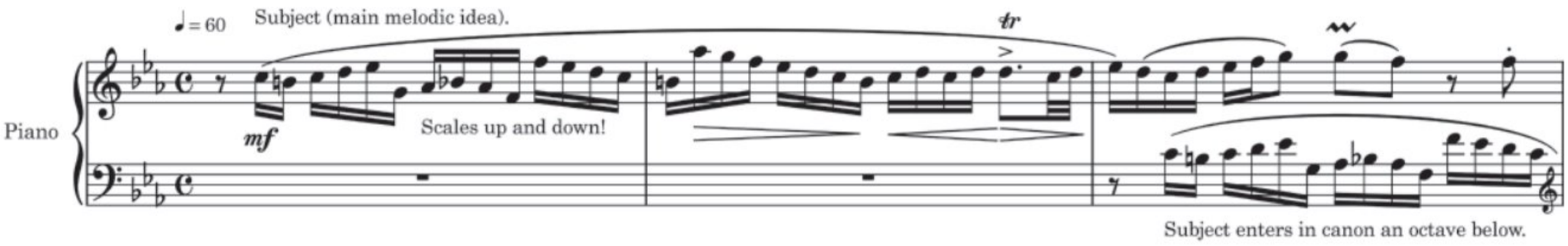
J.S. Bach would make use of this device within his set of works called his *Two Part Inventions BWV 772–801*, particularly in canons of No. 2 in C minor and No. 8 in F major, both on the playlist.

SEE–HEAR–WONDER
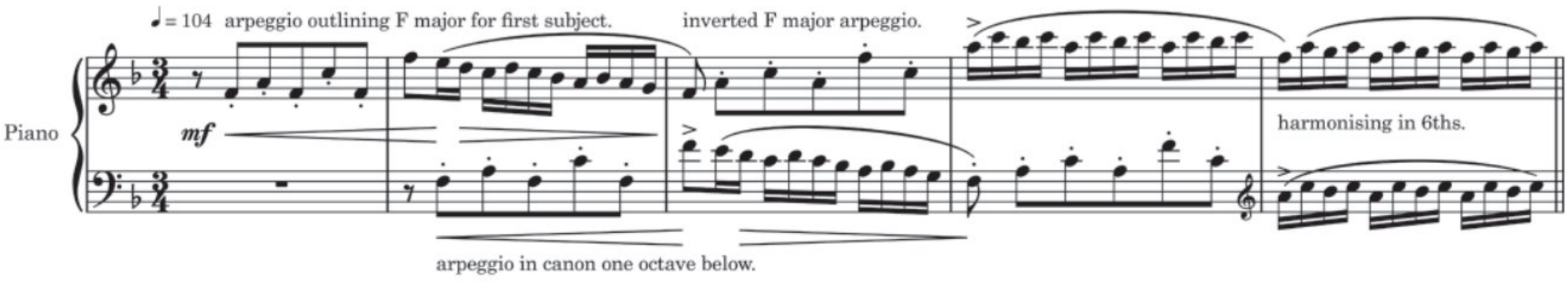
1. **In groups, sketch the few measures below into your portfolio and discuss what you see in their structure.**
2. **Label on the music what you discuss and any canons that you can identify.**
3. **What does it make you wonder about effective melody writing?**

In No. 2, the melody is called a *subject*, and it can be broken up into smaller **motifs**. Both the subject and its canon begin an octave apart and mostly represent a scale in shape. The subject of No. 8 is an **arpeggio** and, when the canon enters an octave below, the top voice plays a descending F major scale.

By presenting both the top and bottom parts together, Bach is now using an over-arching musical device called **counterpoint**, where more than one melody can be heard playing simultaneously. What do you think this could look like in the world of jazz?



■ **Figure 12.26** 'Invention No. 2' subject and canon entry highlighting the scalar movements of each line



■ **Figure 12.27** 'Invention No. 8' subject and canon entry highlighting the arpeggio idea

ACTIVITY: The Mingus canon technique

ATL

- Creative thinking skills: Creating original works and ideas; using existing works and ideas in new ways

The techniques discussed, from canon to counterpoint, are composition techniques characteristic of the 17th Century Baroque era. But if we jump forward to the music of composer, band leader and bass player Charles Mingus (1922–1979), we get two works that are worthy of study and imitation. In this activity, you will compose and perform your very own canons.

1 **'Canon'**: Appropriately named, this work builds its melody (subject) from the C **Dorian mode**. As you listen to the track on the playlist, the second, third and subsequent parts enter with the same subject at each comma. Mingus explores the middle to low ranges of the instruments in his group, adding layer upon layer with each repeat. He then adapts this approach by adding an ostinato rhythm in groups of three underneath the canon. Using the C Dorian mode in Figure 12.28:
 - **a** create your own modal canon in 8 measures using notation software
 - **b** choose where to direct entering parts to 'begin' by adding a small + sign
 - **c** in groups of three or four, play each other's canons; the aim will be to evaluate each other's works and develop a performance that is both contemporary and Baroque inspired.

Hint

You could use guitars with distortion **pedals**, marimbas or drum machines.
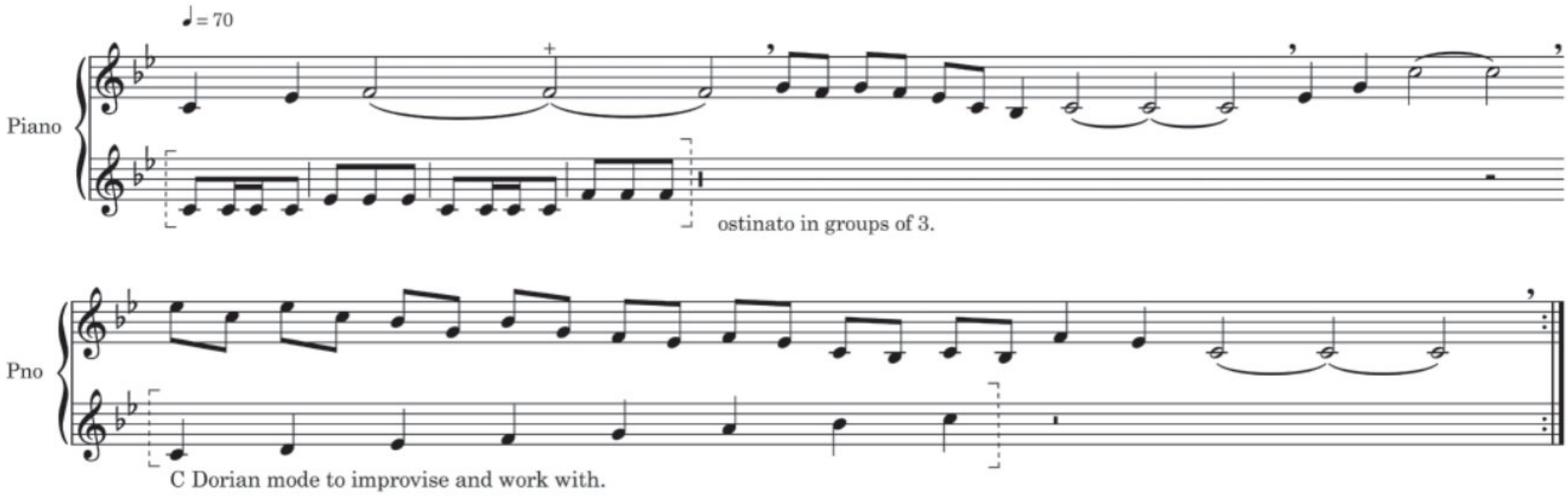


Figure 12.28 'Canon' (1973) parts transcription with ostinato

2 **'Moanin''**: Taken from the album *The Essential Mingus Big Band* (released in 2001), this is one of the most creative tracks to include canons, textural layering, ostinatos and improvisations. You can listen as a class on the playlist or follow the example score here: https://youtu.be/KD5RDzVfNNo

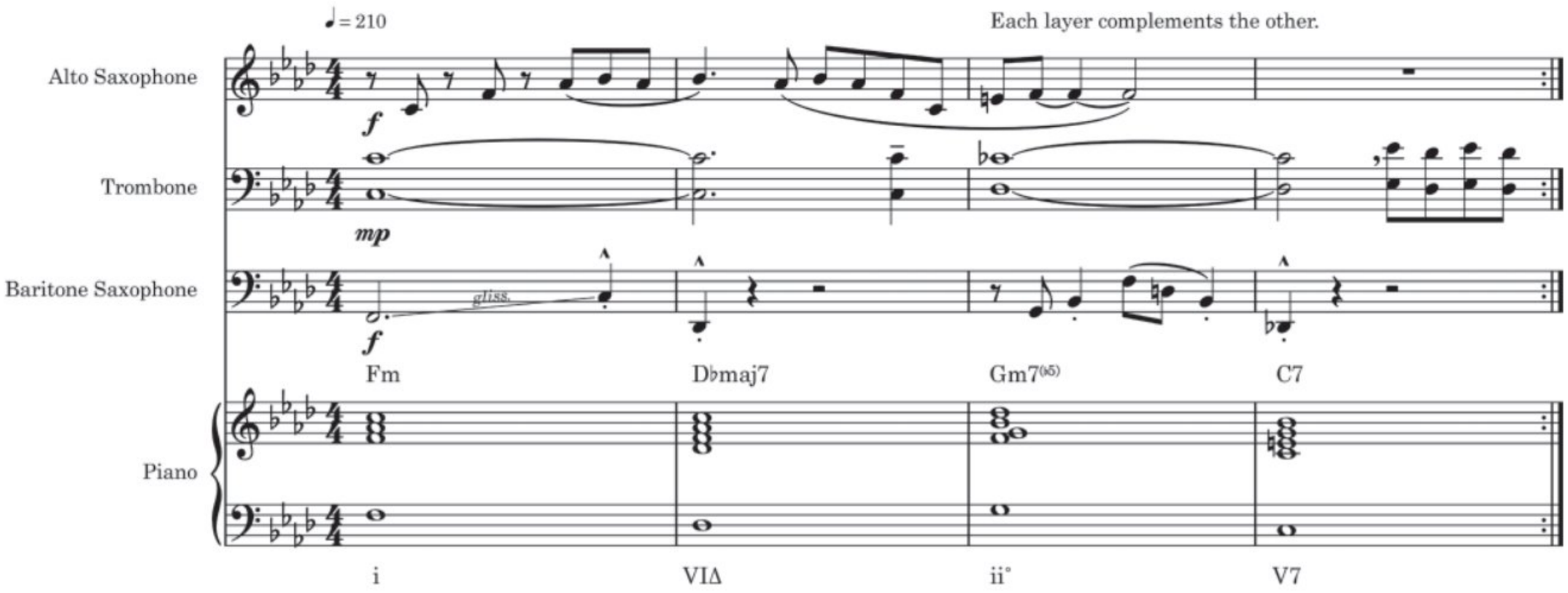
Mingus starts with a bass line, creating an A+B, 8 measures by 8 measures phrasing that plays with the concept of **complementary** rhythms. Mingus layers each voice on top of each other *without* the canonic entries and builds a framework that resembles more of a *jazz-counterpoint* work; including **collective improvisation**.
The bass line is everything. You will hear the entire ensemble playing the bass groove in unison around 2'20 right before the solos.

Your mission is to open a notation program, or using manuscript:

- **a** create a bass line that follows the C Dorian mode in two halves like 'Moanin''; make it funky
- **b** on top of the first bass line, create a counterpart (that is, subject 2) that uses long notes like the trombones
- **c** add a third layer that uses arpeggio shapes (like Bach Invention 8 or the saxophone in 'Moanin'') to fit into the bass and counter lines; you could add the C minor pentatonic or blues scales at this point for colour.

Assessment opportunities

In this activity you have practised skills that are assessed using Criterion B: Developing skills and Criterion C: Thinking creatively.



■ **Figure 12.29** 'Moanin'' (1959) parts transcription in concert pitch

EXTENSION

Experiment adding your canons above your new bass line and perform them to see if they fit. You may have the beginnings of a new Mingus-inspired work

Would composers in 1600 have used the harmony and rhythm of jazz?

THE PAST BECOMES THE FUTURE

Bach's 'Mass in B minor, BWV 232' was his last major work before he died. It is a sacred vocal work based upon the Ordinary, which is the Eucharist worship ceremony in the Roman Catholic tradition. Here each movement is structured around movements in the ordinary mass such as the **i** Kyrie, **ii** Gloria, **iii** Credo, **iv** Sanctus and Benedictus and **v** Agnus Dei. The very opening of the first movement expresses the word Kyrie through four dramatic measures outlining a progression in B minor. While mostly diatonic, it is again the bass line that provides an ascending **chromatic** line for the voices and chords to build upon. Try playing these chords over the top of the bass line from measures 1–4 given to you. They look like jazz chords, don't you think?

Bm (i)	C#m7♭5 (iim7♭5)	D#dim7 (#iii°7)	Em add9 (iv9)
A#dim7 (#vii°7)	Bm (i)	Gmaj7 (VIΔ)	F#maj (V)

■ **Figure 12.30** Progression in B minor

Now compare Bach's 'Kyrie' to Bob Chilcott's (b. 1955) 'A Little Jazz Mass' composed for the 2004 Crescent City Choral Festival in New Orleans, United States. A sample score of the 'Kyrie' can be viewed here: **https://global.oup.com/academic/product/a-little-jazz-mass-9780193356177?cc=nl&lang=en&**



■ **Figure 12.32**

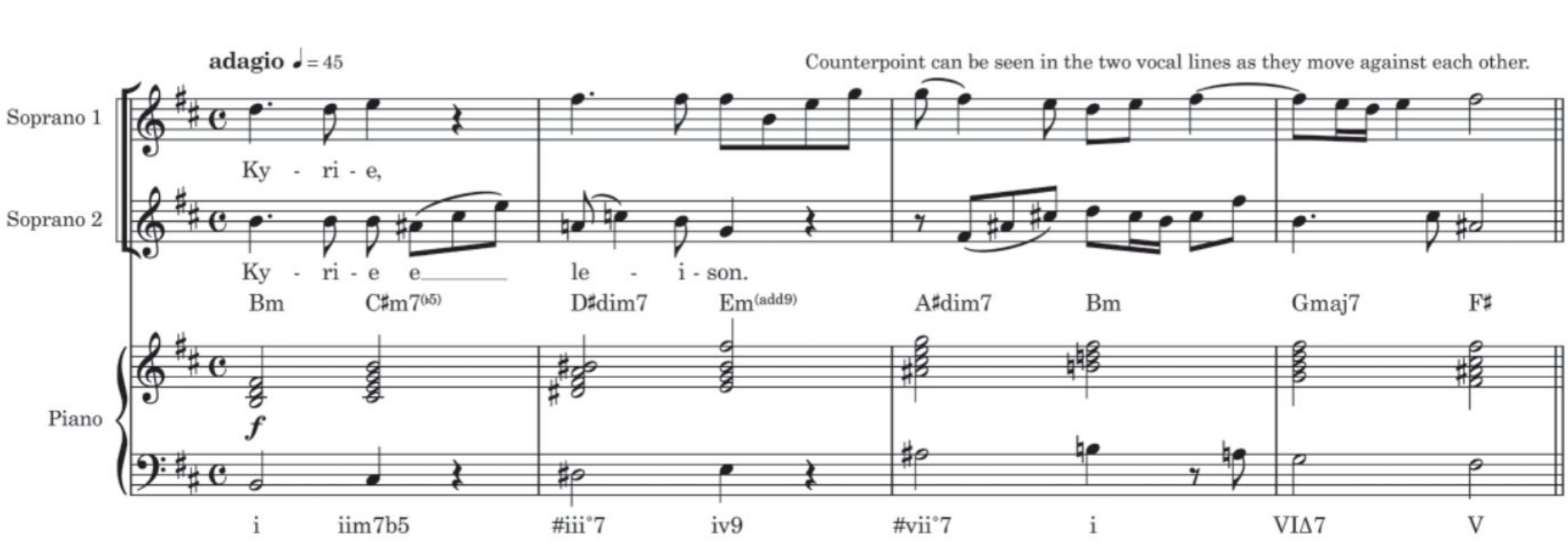
"The Kyrie has real groove, the Gloria swings, the Sanctus sits right back, the Benedictus hums along and the Agnus Dei draws inspiration from the Blues."

In the next activity, we will use the progression and bass line from Bach to create our own work.

COLOUR–SYMBOL–IMAGE

Listen to the performances online or on the playlist. As you do, **create** detailed responses to the following prompts in your portfolio:

1. **Choose a colour that you feel best represents or captures the essence of Bach's 'Kyrie'.**
2. **Choose a symbol that you feel best represents or captures the comparison between Bach and Chilcott's works.**
3. **Finally, choose an image that you feel best represents or captures the essence of Chilcott's 'Kyrie' in comparison to Bach's.**



■ **Figure 12.31** Bach's 'B Minor Mass' first four measures to perform on a guitar, piano or device as two contrapuntal layers; learning chromatic changes like this will improve your listening and playing skills

ACTIVITY: A contrafact on *Kyrie*

ATL

- Critical thinking skills: Considering ideas from multiple perspectives

Just like the opening of Bach's 'Kyrie' the chords and melody should grab your attention for a possible contrafact – a reworking into a jazz tune. We will keep the same key, chord progression and bass line, but we will add two new elements.

1. **A swing rhythm**
 In drum notation, we place parts of the kit on certain lines of the music stave. Open MuseScore or Symphony Pro and enter your own swing pattern using the example given in Figure 12.33.
2. **A bebop scale**
 The bebop scale is an octatonic (8-note) pattern that adds scale degrees to the framework of the Dorian minor mode. The scale has been notated in Figure 12.34 as an example melody that you can experiment with to create a 4-measure loop of your own.

Hint

There are several bebop scales that can be found with research. Try this piano source to get started: www.pianoscales.org/bebop.html

3. **Some bebop chord extensions**
 Finally, using the same chords from Bach, we add notes on top to transform them into extended chords, making sure to listen carefully that they match the melody we have composed (see Figure 12.35).

Hint

Substitute in ii-V patterns like Charlie Parker's 'Bird Changes' as an extension activity.

In this activity it is about experimenting, listening and then playing your own ideas. Try playing the chords you have chosen while someone plays your melody on top. If the melody is too complicated, keep to shorter repeated phrases. You are making Bach swing!
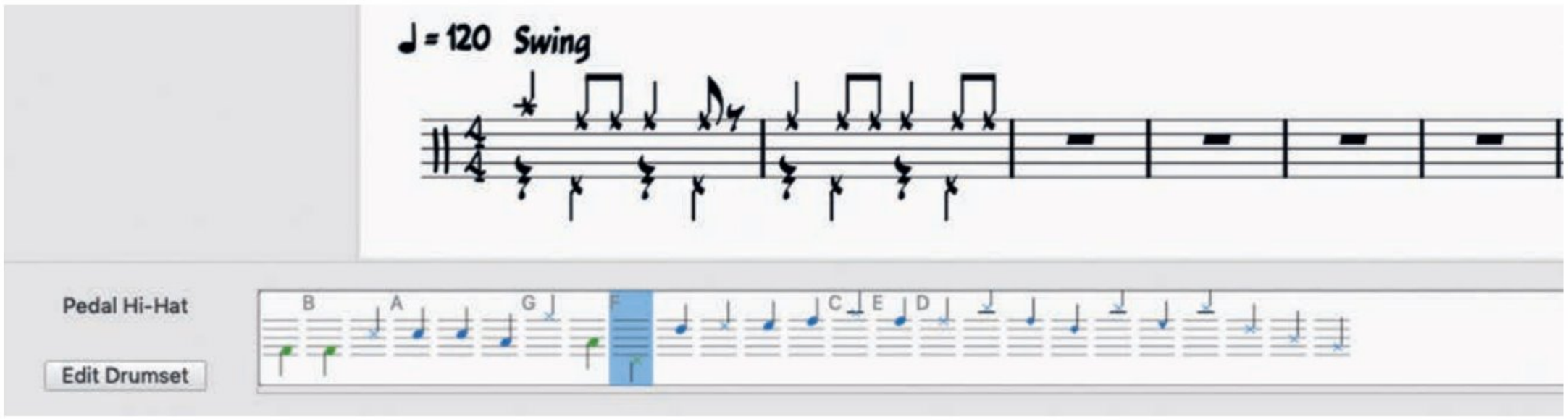
Assessment opportunities

In this activity you have practised skills that are assessed using Criterion B: Developing skills and Criterion C: Thinking creatively.

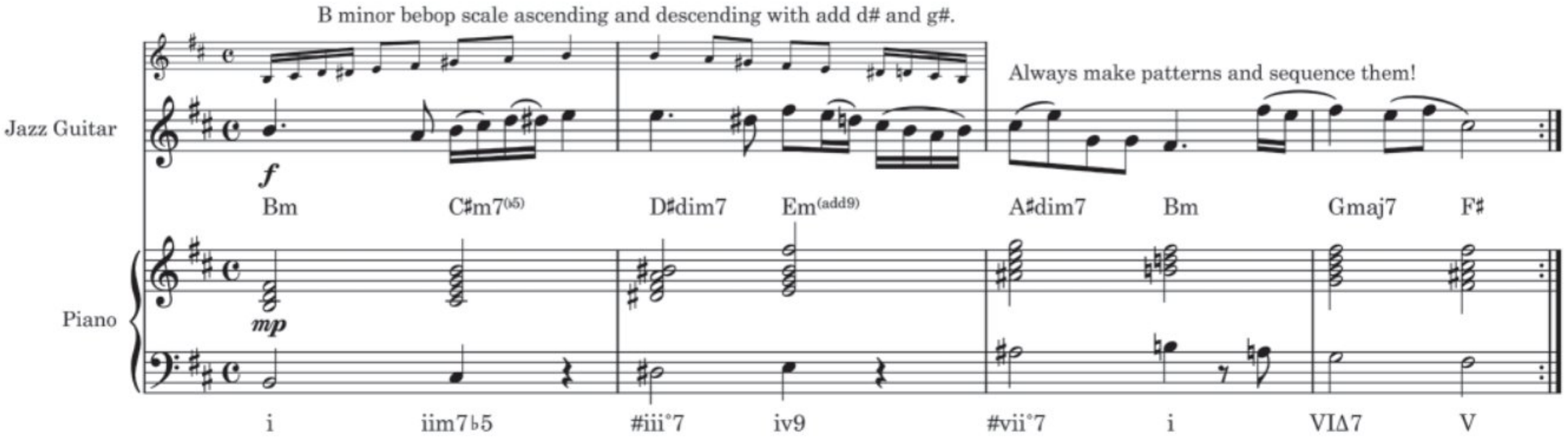
EXTENSION

Ensemble performance: Melodious Thunk

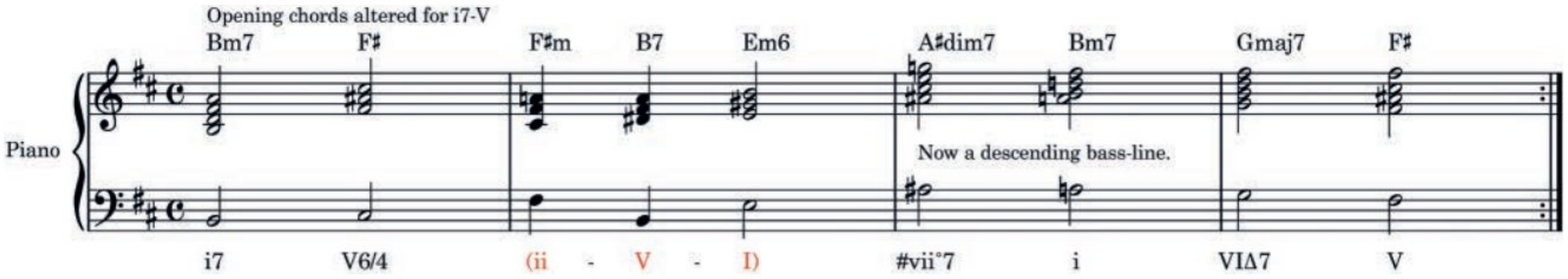
Composed by David Biedenbender (b. 1984; www.davidbiedenbender.com), this work is inspired by the piano style of jazz musician Thelonious Monk, with references to Dizzy Gillespie's 'Salt Peanuts'. Thelonious Monk was nicknamed *Melodious Thunk* because of his unique playing style, and Biedenbender used the nickname onomatopoeically to compose this work for winds and percussion. Complete with short motifs, changing **time signatures** and the 'Salt Peanuts' octave interval leaps, this work is a great performance piece to read and perform.



■ **Figure 12.33** Swing rhythm notated in MuseScore's free notation program



■ **Figure 12.34** Bebop melody over the progression from Bach's 'Mass in B Minor' (which is how we decide which scale to start experimenting with)



■ **Figure 12.35** Bebop chords over our contrafact melody

Listen to and view a copy of the score through Murphy Music Press here:
http://murphymusicpress.com/products/W-102

Then in your portfolio, go through the sample score and copy down motifs that you find work well in different sections. If you perform it, interview your ensemble members about how they play their parts.

Your aim is to find a series of rhythmic parts that inspire you in writing for wind or percussion instruments; specifically how percussion instruments (both tuned and untuned) can be used in a leading role within the ensemble.

Are contrafacts really composing original works?



■ **Figure 12.36**

CONTRAFACTUM!

In previous chapters, we have looked at the structure of the 12-bar blues and its reliance on the chords of I-IV-V in either major or minor keys. But if you are a musician like Charles Mingus, continually 'splicing, dicing and… enriching the **texture** of his music' you would see the blues structure as a framework for some creative borrowing.

F7 (I7)	F7 (I7)	F7 (I7)	F7 (I7)	B♭7 (IV7)	B♭7 (IV7)
F7 (I7)	F7 (I7)	C7 (V7)	C7 (V7)	F7 (I7)	F7 (I7)

■ **Figure 12.37** Mingus' 6/4 blues structure (12 bars)

ACTIVITY: Expanding on the blues

ATL

■ Transfer skills: Inquiring in different contexts to gain a different perspective

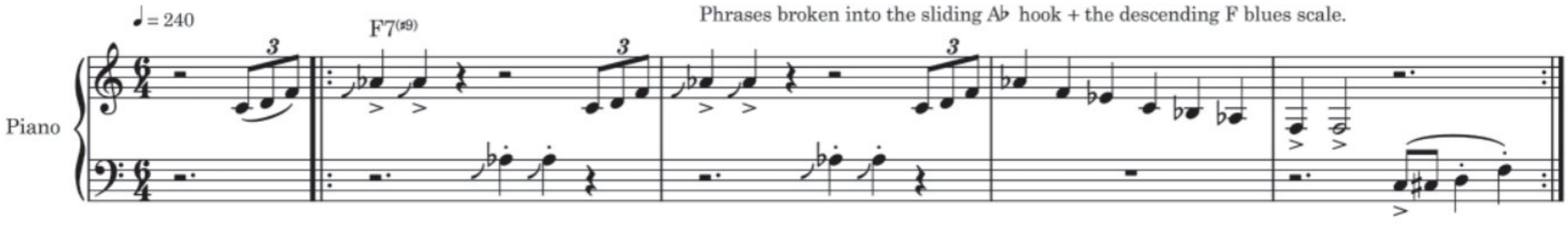
Listen to the track 'Wednesday Night Prayer Meeting' and, **using** the system **developed** around the acronym **IDEA**, **create** a series of points around what you can **identify** in this track.

Mingus was a dynamic band leader and would often hold such jam sessions to experiment with alterations in rhythm or structure – such as playing the blues in 6/4 with a pentatonic riff (see Figure 12.38).

1. **Using the structure provided by Mingus in 6/4, put yourself into small groups where each person has a role. You will need percussion or drums, a bass instrument, possibly guitar or piano to play the chords, and a melodic instrument like a flute, guitar, voice or keyboard.**
2. **Rehearse the 'Wednesday Night Prayer Meeting' blues structure by playing the chords and their bass notes over a steady quarter-note (crotchet) pulse.**
3. **Take turns playing the F minor pentatonic scale over your rehearsed progression in short phrases.**
4. **Decide as a group which melodic instruments will play at which points and stage a performance for your class of the 'Wednesday Night Prayer Meeting' blues. This will be to get peer feedback and evaluate the performance.**

Assessment opportunities

In this activity you have practised skills that are assessed using Criterion B: Developing skills and Criterion D: Responding.



■ **Figure 12.38** 'Wednesday Night Prayer Meeting' transcription (The F blues scale is relied upon in each measure with the A♭)

MEET THE ARTIST: WES MONTGOMERY

Wes Montgomery (1923–1968) was a guitarist who was famously known for playing his melodic lines on the guitar in octaves. This created a distinct sound and added a textural element to his playing. Using the playlist and your portfolio, complete the following in your performance groups:

1 Analyse the track 'D-Natural Blues' and identify and discuss how you think Montgomery changed the blues structure to fit his style of interpretation.

2 Go back to your class *blues performance* and now play the F minor pentatonic riffs that you created in octaves, just like Montgomery.
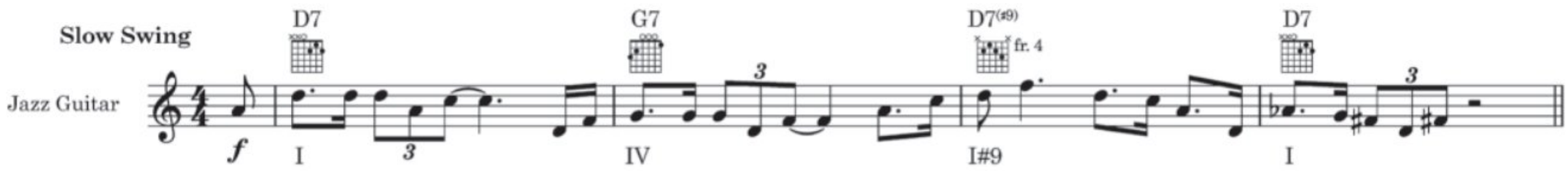


■ **Figure 12.39**

EXTENSION

Play through the now altered blues structure of Wes Montgomery with #9 chords and a ii-V-i progression in E minor that leads to the dominant of D7, the A7 chord. This is a form of substitution. Instead of playing the V7 chord, Montgomery adds in a **ii-V-I**, which leads our ears to the V7.

◆ Assessment opportunities

In this activity you have practised skills that are assessed using Criterion A: Knowing and understanding and Criterion D: Responding.



D7 (I7)	G7 (IV7)	D7#9 (I7+9)	D7 (I7)	G7 (IV7)	G7 (IV7)
D7 (I7)	F#m7♭5 **(ii)**, B7#9 **(V)**	Em **(i)**	A7 (V7)	D7 (I7), B7#9	Em, A7 (V)

■ **Figure 12.40** Montgomery's 'D-Natural Blues' structure (12 bars)

I USED TO THINK… BUT NOW I THINK…

If *the blues* were originally a 12-measure pattern following a set harmonic line, it would only take a few creative individuals to:

1 **substitute or add new chords with their extensions, or**
2 **change the rhythm and structure as a whole.**

Take a moment to reflect on the two pieces presented above, their motifs, chord progressions and the ways they stretched the form called *the blues*. In your portfolio, write the prompt: **I used to think… But now I think…** and, with reference to Mingus and Montgomery, add your reflection.

We will now extend our thoughts into a new realm of contrafacts that technology has brought to jazz.

How can improvisation be approached as a form of creativity and interpretation?



■ **Figure 12.41**

USE MUSICAL BUILDING BLOCKS TO GENERATE IDEAS

We have made our way back to the introduction material shown in Chapter 1 on intervals. Intervals are the most basic building blocks of music, from major and minor steps to the octaves of Wes Montgomery or the circle of fifths in Baroque sequences. We cannot escape these wonderful elements that are used in such versatile ways. In the following activity, will explore the ingenious use of intervals in John Coltrane's 'Giant Steps'.

In Figure 12.42, you will notice:

1. a descending bass line
2. a melody that moves in intervals of 3rds
3. chords that follow a pattern of a descending major 6th, then a rising perfect 4th.

THINK–PUZZLE–EXPLORE

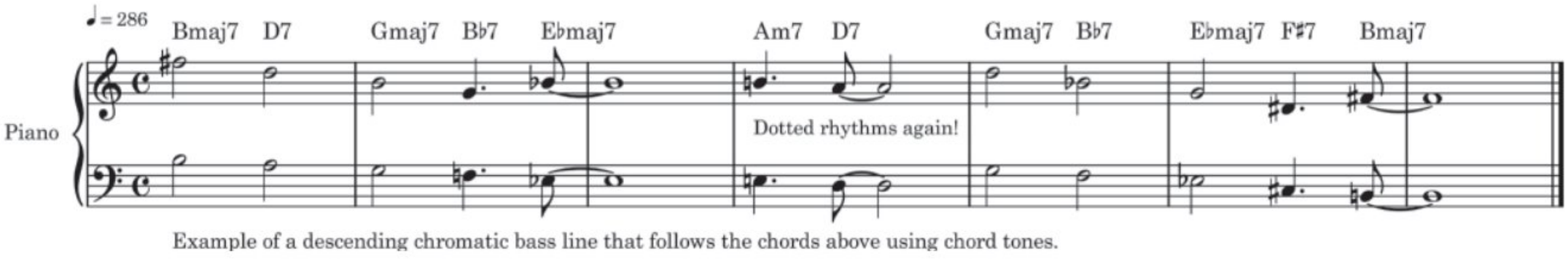
With your portfolio open, watch the video by Vox on 'The most feared song in jazz, explained': 'Giant Steps' by John Coltrane, at **https://youtu.be/62tIvfP9A2w**. What do you think is unique about this composition?

1. **What do you think you know about this topic (including intervals, the circle of fifths and progressions)?**
2. **What questions or puzzles do you have after watching the video?**
3. **How could you explore this topic further?**

Hint

You can research many examples of the chart and how to play the Coltrane changes. One such resource is Jazz Guitar Online: **www.jazzguitar.be/blog/giant-steps**, and it provides both notation and **tab** for students with audio examples.

This piece is a work that both inspires and challenges musicians because of its *harmonic rate of change* (how fast the progression moves).



■ **Figure 12.42** 1960 'Giant Steps' transcription

ACTIVITY: Creating in reverse

ATL

- Transfer skills: Applying skills and knowledge in unfamiliar situations

In this activity we will be taking a *reverse* approach to **creating** a jazz contrafact. You will need:

- **an instrument to experiment playing chord progressions on**
- **some manuscript to sketch your ideas**
- **software to notate and then record your final piece.**

First, listen again to the sample track from Anomalie's EP entitled 'New Space':
www.soundslice.com/slices/4jDcc/course-preview-882.
You will notice it **outlines** a descending progression that evenly spaces out its chords, with the top notes giving a clear outline of a melody in 3rds and as an arpeggio.

1. **Using the chords from a jazz standard titled 'Misty', play them as shown in Figure 12.44.**
2. **Copy this progression into your portfolio, identifying the notes that belong to each chord. For example, E♭ major 7 is E♭-G-B♭-D.**
3. **Using the notes in each chord, create a melody line that connects each chord (almost as if connected by string). An example is given for you in Figure 12.45.**
4. **Finally, notate or record 8 measures of your melody to perform in front of your class.**

Assessment opportunities

In this activity you have practised skills that are assessed using Criterion B: Developing skills and Criterion C: Thinking creatively.

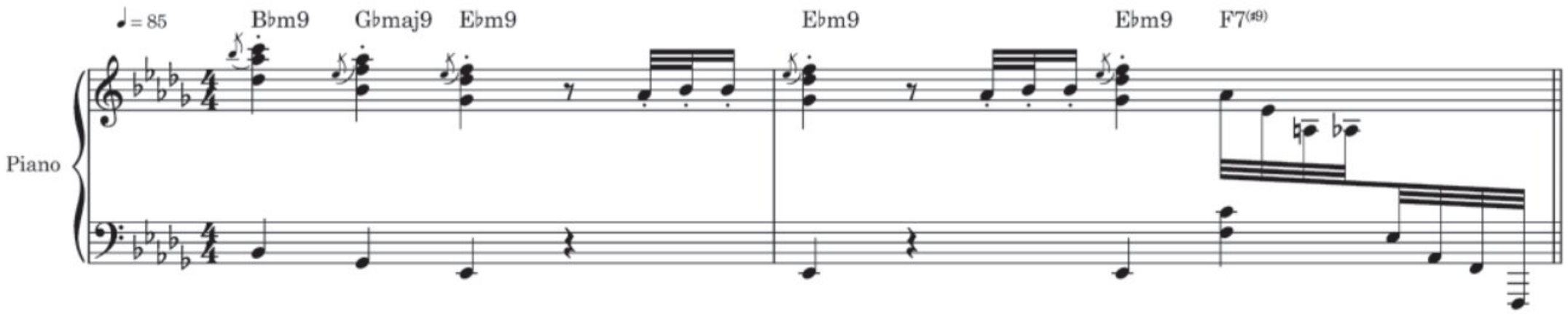


Figure 12.43 'New Space' transcription example showing chords by 3rds and a final 7th #9 chord

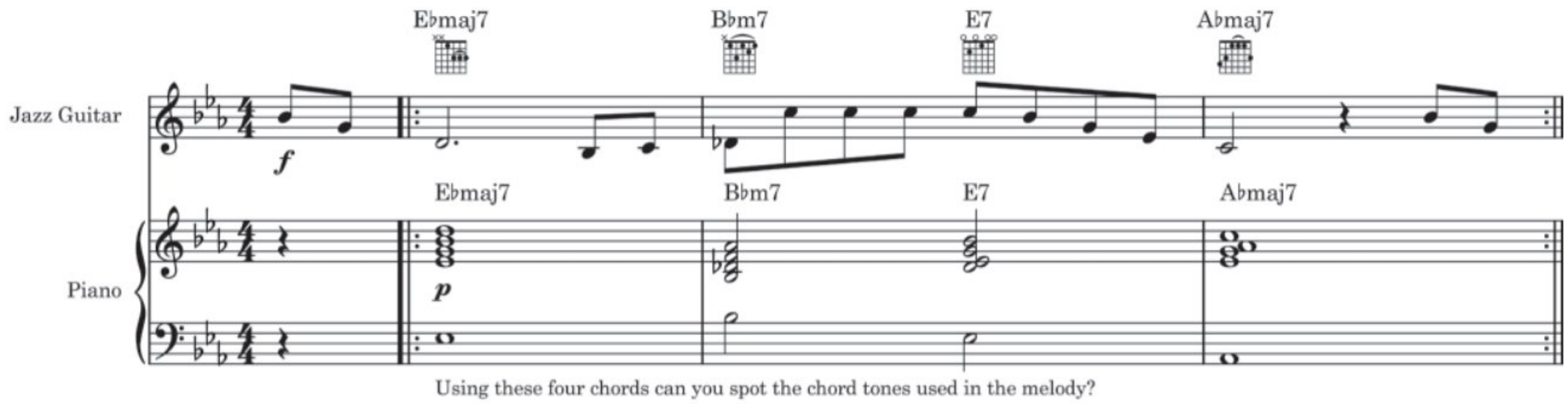


Figure 12.44 'Misty' chord progression with 'string-like' melody example

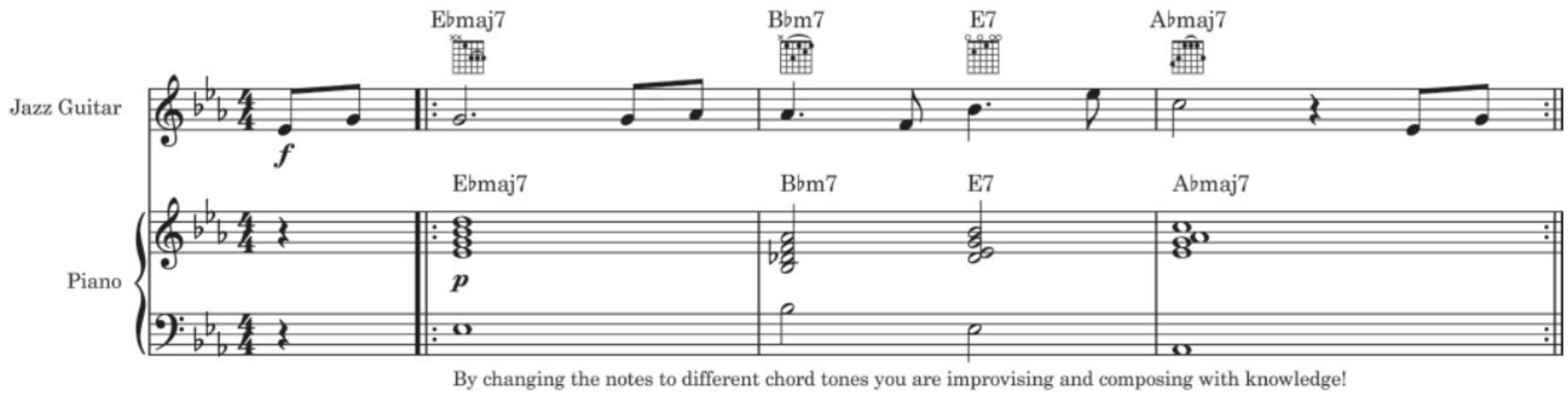


Figure 12.45 'Misty' inspired melodic line composed using chord tones

Listening strategically: Get an IDEA

Lo-fi (part 1)

As you listen to the works suggested in this chapter, consider how a combination of jazz, synthwave and hip-hop genres have led to a style known as *lo-fi*.

1. Using the acronym **IDEA**, first analyse the Errol Garner tune 'Misty' sung by Ella Fitzgerald on the playlist.
2. Then analyse the lo-fi track 'Misty' by artist Ninjoi using the same points that you developed for the jazz standard version.
3. Finally, using a Venn diagram model, compare and contrast the two works, showing what is clearly jazz, and what is lo-fi. This will require some independent research and reading.

To research the genre of lo-fi further, and how contemporary artists are interpreting contrafacts in their own ways, visit **https://www.edmsauce.com/2020/05/16/lo-fi-artists/** and music production websites such as EDMProd: **www.edmprod.com/lofi-hip-hop**





■ **Figure 12.46**

! Take action

- ! Find out who the composers of the Baroque era were, why they are important and just how their music connects to that of jazz in the 20th and 21st Centuries.
- ! Explore different dances and orchestral, vocal or band works with the aim of dissecting them. Then, look for those same discoveries in swing jazz, bebop, fusion and lo-fi genres.
- ! Approach different musical styles from the angle of an observer. Create, perform and experiment with new genres to raise awareness of cultural and global musical forms.
- ! Music history is often presented from the view of the Western Art tradition. This chapter connects the devices in use, but there are many cultures, continents, groups and composers that have made their mark.
 Organise a 'Global Artist Event' where you and a group of friends present on a little-known composer, style or artist from any culture to share with an audience.

How do musical clichés lead to the reframing of musical ideas?

MAKING CONNECTIONS

Throughout this chapter, we have seen multiple examples that connect either the bass, the structure, the chords, scales and arpeggios from the Baroque to Jazz eras. Even now, we are beginning to see a new type of imitation and contrafact within electronic genres taking on the elements of jazz for lo-fi or hip-hop. But there are contemporary artists who use the dominant features of jazz and find ways of presenting them in fresh and creative arrangements. One such work is 'Mr Zoot Suit' by Ingrid Lucia and the Flying Neutrinos.

They use the signature drum pattern from 'Sing, Sing, Sing' (a 1936 song by Louis Prima and Benny Goodman's band) as well as a repeating *line cliché* with a descending bass line Cm-Cm/B♭-A♭7-G7. The opening trumpet line also includes the dotted jazz rhythm that we looked at in other works from Figure 12.25.

ACTIVITY: Mr Zoot Suit

ATL

- Organisation skills: Selecting and using technology effectively and productively

In this activity, you get to take the (i)-(i)-(VI7)-(V7) chord progression and add your own improvisation on top of 'Mr Zoot Suit'. We finally have the example rhythms, melodies and hooks to express what have we learned:

1. **Organise yourselves into small groups, where everyone rehearses playing the chord progression below on a collection of instruments. Once you are confident in performing the chords, the rhythm in swung 8ths (quavers) and the bass line, record it into a program like GarageBand.**
2. **Loop the progression that you performed so that you get a clear 8-measure pattern before it resets. Then, taking it in turns, use the C minor blues scale or C Dorian mode to create your own melodic line over the 8-measure loop (just like the trumpet introduction).**
3. **Once you have taken turns to decide on a series of phrases, perform them in front of your class. Then as a final experiment, see if you can all play your own phrases simultaneously, building them in one at a time.**

Document your recording process, phrases and final performance in your portfolio. This is the beginning of applying your skills to new areas of musical knowledge.

Assessment opportunities

In this activity you have practised skills that are assessed using Criterion B: Developing skills and Criterion C: Thinking creatively.
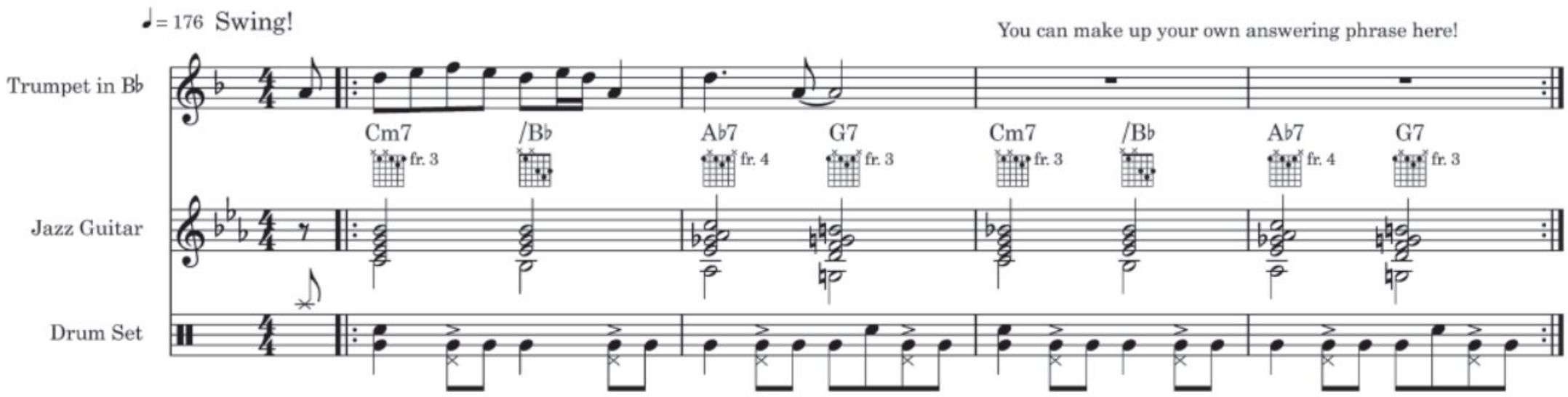


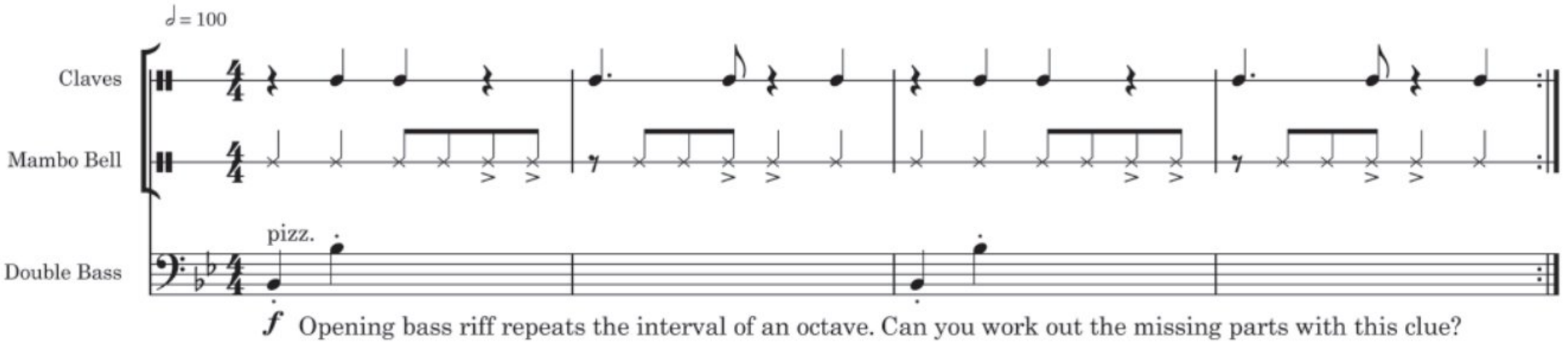
Figure 12.47 Three elements of 'Mr Zoot Suit' transcribed to perform https://youtu.be/1PMfX0UHdlk

EXTENSION

Ensemble performance: Manteca

Composed by jazz musicians Dizzy Gillespie, Chano Pozo and Gil Fuller in 1947, 'Manteca' is a pivotal work in the combination of **a** Afro-Latin rhythms and **b** jazz phrasing, including simultaneous parts and a new type of bass. You can see Dizzy Gillespie explain the arrangement here:
https://youtu.be/IMipw5NWSZk

The work resolves around a 2/3 **clave**, a mambo bell pattern and octave interval bass line. Listen to the work on the playlist, and try to complete the missing ostinato in the bass part. By studying this score and its rhythmic features, you will have a stronger understanding for the next task.



■ **Figure 12.48** Mambo pattern with opening octave on B♭. Can you work out the rest of the bass line?

Listening strategically: Get an IDEA

Lo-fi (part 2)

As you listen to the works suggested in this chapter, consider stepping into the realm of electronic music and how a combination of jazz, synthwave and hip-hop genres have led to the style known as *lo-fi*.

1. Using the acronym **IDEA**, first analyse the Duke Ellington tune 'In a Sentimental Mood' (1935) from the playlist. This track includes an interesting piano ostinato as well as John Coltrane on the saxophone.
2. Then analyse the lo-fi track 'In a Sentimental Mood' by artist Ninjoi using the same points that you developed for the jazz standard version.
3. Finally, using a Venn diagram model, compare and contrast the two works, showing what is clearly jazz, and what is lo-fi. This will require some independent research and reading.

As you will have heard, the style of playing found in jazz has had a major influence on electronic musicians.

ACTIVITY: Line clichés (part 2)

ATL

- Creative thinking skills: Practising visible thinking strategies and techniques

Certain passages or repeated musical lines in jazz are called *line clichés*. They are repeated and used as both joining and ending phrases. Much like a phrase in the Baroque era that may end with a I-V progression, line clichés provide a hook back to the beginning of a phrase. It would then be no surprise that when placed at the end of a phrase in the blues, we get more *line clichés* and these are called *turnarounds*.

Many jazz standards use these types of turnaround, from 'Misty' to 'How High the Moon', both of which are featured in this chapter. Spend some time rehearsing these on a piano, guitar or even a device. Being able to hear and play these turnarounds will improve your listening and creativity.

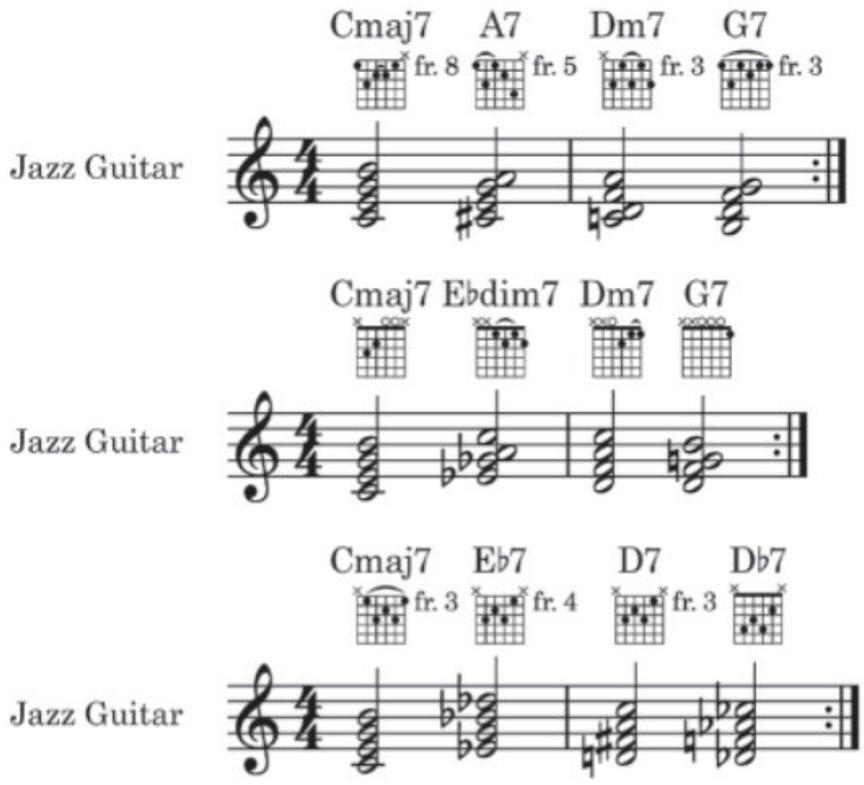


Figure 12.49 Three turnaround examples in C major for jazzy blues

Assessment opportunities

In this activity you have practised skills that are assessed using Criterion A: Knowing and understanding and Criterion B: Developing skills.



Figure 12.50

How is harmony a structural element of jazz and Baroque music?

EXPERIMENT TIME

J.S. Bach's 'Chaconne, Partita No. 2 BWV 1004' was composed between 1717 and 1720 and is written as a **theme and variations** over a now familiar lament bass in 64 variations. The collection, or *Partita*, contains five movements overall: **i** 'Allemanda', **ii** 'Corrente', **iii** 'Sarabanda', **iv** 'Giga' and **v** 'Ciaccona' ('Chaconne'). All of them are dance forms but Bach's chaconne refers back to a much older type of Spanish dance, with its underlying bass pattern repeated in different forms for each variation.

THINK–PAIR–SHARE

You can listen to the work on the playlist or on Soundcloud, with an article on its performance here: **https://onbeing.org/blog/the-story-behind-bachs-monumental-chaconne**. Conduct independent research on the variations and, **using** your listening skills, describe in your portfolio the types of patterns you hear in the recording by violinist Hilary Hahn. Compare your findings and add to each other's notes.

1. **By using the form of *theme and variations*, what was Bach able to do with this piece?**
2. **What types of variation was Bach able to express with a solo violin? (Make reference to melodic, harmonic and rhythmic elements.)**
3. **If you were to compose a work in the theme and variations form, what does Bach's 'Partita No. 2 BWV 1004' demonstrate to you?**

ACTIVITY: The 'Badinerie' experiment

ATL

- Transfer skills: Comparing conceptual understanding across multiple subject groups and disciplines

The 'Badinerie' is a movement from Bach's *Orchestral Suite No. 2 in B minor, BWV 1067*. This activity will **present** you with a series of approaches to interpret this work into a jazz-contrafact **using** the tools we have **developed** over the last three chapters. First listen to the work, with its opening melodic theme and underlying harmony summarised below:

Our goal with this experiment will be to complete the following:

1. **Transform the 4-measure theme into two phrases.**
2. **Identify moments in the arpeggio-based theme where we can swap some notes for a bebop scale. You can also change the rhythm by removing 16th notes (semi-quavers) and adding triplets.**
3. **Substitute the harmony underneath with your own variations of extended chords.**
4. **Finally, put it all together into a notation program like MuseScore as your own jazz contrafact on a theme of Bach.**

This experiment can be written many times, played and rewritten.



Figure 12.51
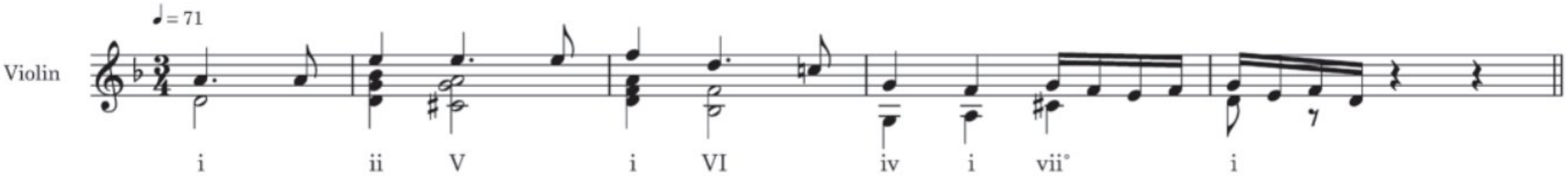


Figure 12.52 Bach 'Partita No. 2 BWV 1004 Chaconne' mm1–4 with chords and bass line outlined in D minor
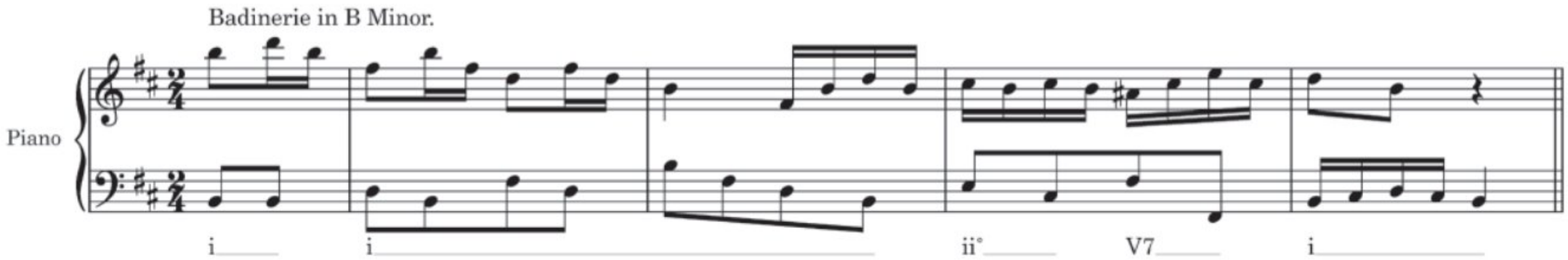


Figure 12.53 Bach's 'Badinerie' theme and outline of harmony
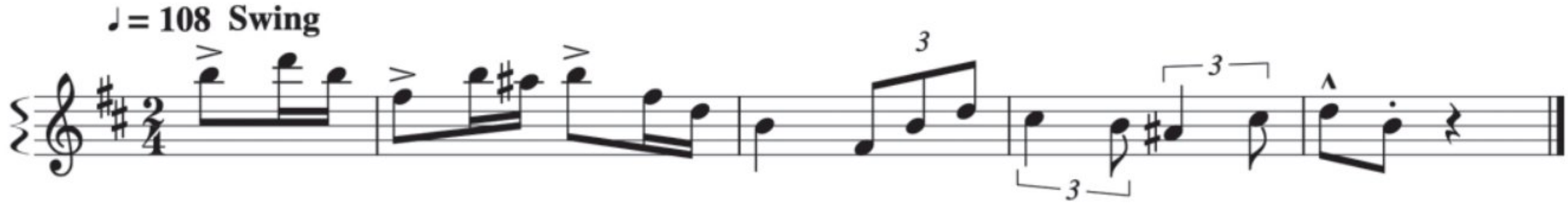


Figure 12.54 Bebop B minor scale and 'Badinerie' mixed
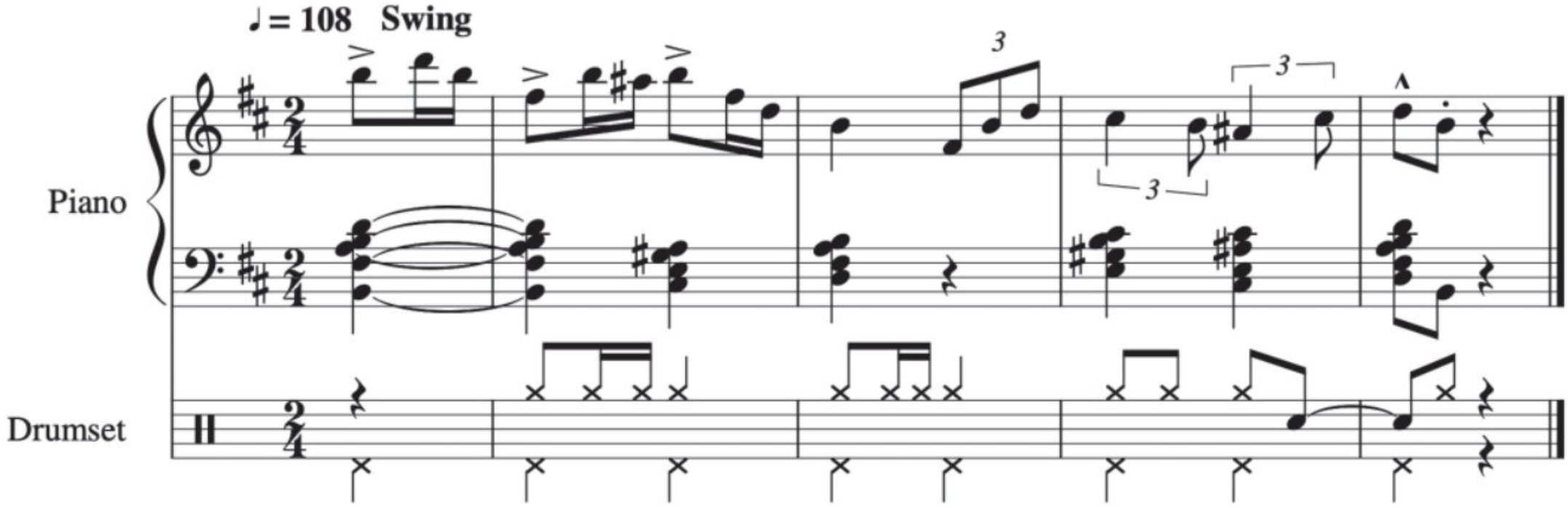


Figure 12.55 Jazz-style chords of Bm7 (i) / Bm7 (i), A major 7 (VIIΔ) / Bm7 (i) / C#m7 (ii7), C# dim7 (ii°7) / Bm7 (i)

Assessment opportunities

In this activity you have practised skills that are assessed using Criterion B: Developing skills and Criterion C: Thinking creatively.

Listening strategically: Get an IDEA

Your opinion

The final task for listening is to create a mind-map that covers the works presented in this chapter, and reflects on the essential question at the beginning:

"Is Jazz actually Baroque music in disguise?"

Using each section and the notation provided, gather three items of evidence that you would claim presents an argument for, or against, this assertion. Evidence can take the form of notation, timings from recordings, quotations from musicians and artists, as well as your own listening analyses. What do you think about elements being copied or imitated across the ages?

Is there a purpose to the analysis and imitation of past works?



■ **Figure 12.56**

Reflection

In this chapter we have **used** a method of *comparison* and *contrast* to **observe** and **hypothesise** whether music from the Baroque and Jazz eras are similar in their approach to music-making. The **contrast** is clear from a time and technological point of view. However, from a technical point of view we have **described** and **examined** music that uses similar devices in melody, harmony and form. The structures that were **outlined** showed not only a reliance on popular musical forms, but that composers and artists regularly referred to them, adapting them to their own purpose. Being able to see, hear and then recognise these connections will provide a deeper knowledge of music and the ability to experiment with more creativity.

SOME SUMMATIVE OPTIONS TO TRY

Use these ideas to apply and extend your learning from this chapter. These problems can be assessed using any of the strands suggested above the summative activities. The presentation and portfolio requirements are given after the description.

THIS TASK CAN BE USED TO EVALUATE YOUR LEARNING IN CRITERION A AND CRITERION D (ALL STRANDS).

SUMMATIVE 1

This is a study of deconstruction. Using the work 'Mambo Influenciado' composed by Chucho Valdés (b. 1941), deconstruct it into separate blocks of musical evidence that you can play, experiment with and annotate visually.

Show its bass lines, chords, progressions, rhythmic layers, melodic phrasing, use of intervals and possibly even improvisation techniques. Then, research one Baroque work by Vivaldi, Handel, Bach or even Purcell to compare and contrast with a similar deconstruction of structure and compositional techniques.

Presentation and portfolio

You can present your findings in different ways:

1. **As a TEDx Talk or podcast, with script notes and audio examples that are referenced, or**
2. **As an online article, where you pose as a music journalist and end your article with a bibliography of your research.**

Your goal is to present an argument that builds on the material shown in this chapter.

Resources for 'Mambo Influenciado' include:

1. **'Mambo Influenciado' score video:**
 https://youtu.be/EvLGRd2FdHI
2. **A student group performance video:**
 https://youtu.be/p81exEXZ9gc
3. **Bass line score on Soundslice:**
 www.soundslice.com/slices/1zWcc

THIS TASK CAN BE USED TO EVALUATE YOUR LEARNING IN CRITERION A, CRITERION B AND CRITERION C (ALL STRANDS).

SUMMATIVE 2

Your mission is to create a jazz-influenced contrafact of Vivaldi's exciting 'Aria, RV 644: Air Armatae face et anguibus' from his oratorio Juditha Triumphans: https://youtu.be/ZxrBSad5FWQ. The score can be viewed here: https://youtu.be/34DbY8ibiZs. Your goal is to list and generate a palette of 'workable material' to enter into a notation program or DAW to create your own contrafact. This material includes its structure, bass line, chords, harmonic progression, phrasing, texture and sequencing.

Presentation and portfolio

Your contrafact will need to be performed or 'played back', showing sketches and drafts in your portfolio, for example:

1. **Turn the work into a neo soul or lo-fi piece by breaking up fragments with technology to create phrases that fit a new progression. You can research how to do this online, for example: https://youtu.be/4wgu2XmA9g0**
2. **Write a new arrangement of an existing song for school choral or wind ensemble similar to 'A Toot in Ninesia for Clarinet Sextet', arranged by James Balentine. This is based on Gillespie's 'A Night in Tunisia': https://youtu.be/38ByZO9y65I. It uses motivic development to structure the new version.**

Portfolio presentation

Documenting and sharing

Use the concepts discussed in this chapter to compose for service and action activities or community projects. Your investigations will have heightened your listening and filled out your portfolio to such an extent that your ears are now are powerful creating tools. Which creative endeavours will you be involved with next?

Use this table to reflect on your own learning in this chapter.						
Questions we asked	Answers we found	Any further questions now?				
Factual: What is a concerto? What is a contrafact?						
Conceptual: How is harmony a structural element of jazz and Baroque music? How can Baroque compositional techniques inspire new works? How do musical clichés lead to the reframing of musical ideas? How do 'variations on a theme' promote new forms of interpretation? What role does repetition play in identifying structure in music? How can improvisation be approached as a form of creativity and interpretation?						
Debatable: Would composers in 1600 have used the harmony and rhythm of jazz? Are contrafacts really composing original works? Is there a purpose to the analysis and imitation of past works?						
Approaches to learning you used in this chapter:	Description – what new skills did you learn?	How well did you master the skills?				
		Novice	Learner	Practitioner	Expert	
Organisation skills						
Information literacy skills						
Critical thinking skills						
Creative thinking skills						
Transfer skills						
Learner profile attribute(s)	Reflect on the importance of being open minded for our learning in this chapter.					
Open minded						

Glossary

12-tone row A series of musical notes that contains all twelve pitch classes in a particular order

accent When a stress, or stronger attack, is emphasised on a particular note or set of notes

acciaccatura A form of ornamentation often referred to as a crushed note because the beat is condensed to perform it, followed quickly by the note it is attached to

Aeolian mode A series of notes that pre-dates the Western major / minor system; using the white keys of the piano, it is found by playing A–A

aerophone A flute-like instrument that produces sound by air; this is a tone-colour classification

appoggiatura A form of ornamentation that adds a non-chord note to a melody, stressing this note before the downbeat of the note it is attached to; it is often called a *grace note*

arpeggio Playing the notes of a chord in a broken style, one after the other, rather than simultaneously

arranger Someone who takes an existing piece of music and alters it to fit within a new style or genre

augment To lengthen (a rhythm, melody or phrase); part of the process called *motivic development*

bossa nova A Brazilian style of music with a distinct beat that evolved from *samba canção*

cadence A musical full stop often heard as a series of chords, one after the other

canon The compositional technique where voices or melodies enter one at a time, often over each other

chant A musical line, often monophonic (one part) that was designed to emphasise the text being sung

chord Three or more notes, stacked on top of each other to form what is called a *triad*

(chord) progression String of chords or triads, played one after the other in different patterns called *progressions*

chord tones Notes belonging to the chords, played in a way that allows the audience to perceive the changes in harmony

chordophone Bowed instrument that is plucked, bowed or strummed

chromatic Using notes that are not part of a scale or key, often including sharps, flats and naturals, e.g. not diatonic

clave pattern A specific percussion instrument, and a pattern of 2 against 3 or 3 against 2 common to different genres of Latin-American music from Brazil to Cuba

close range Notes that do not travel further than a few steps away from the tonic (home pitch)

collective improvisation Many artists improvising at the same time, simultaneously completing each other's musical sentences

command A simple order or instruction to complete a task used in coding language

complimentary A pattern, often a rhythmic grouping in different layers that when combined fill out each possible note combination like a puzzle, but separately show different combinations and patterns including rests

concerto Large-scale work that has evolved over time; can include one large group with a soloist (*solo concerto*) or a group of soloists with backing (*concerto grosso*)

contrary motion Two melodic lines moving in the opposite direction

counterpoint An essential device in Western art music that uses different techniques to layer voices or melodies over each other; literally 'note against note'

crotchet Quarter-note, worth 1 beat

development See *motivic development*

diminution Shorten (a rhythm, melody or phrase; part of the process called *motivic development*

Dorian mode A series of notes that pre-dates the Western major / minor system; using the white keys of the piano, it is found by playing D–D

duration Synonymous with the concept of *rhythm*

electrophone An instrument whose sound is electronically produced

exposition The opening section of a musical structure called *sonata form*

extension A chord or triad with extra notes added on top, e.g. Gadd9

fingerprint A defining feature or characteristics that can be recognised and identified from other musical patterns and devices

fragment To break apart / chop up sections of melodies, rhythms and phrases (verb), or the smaller parts of these (noun); this is a part of the process called *motivic development*

function The grouping of commands into a string of instructions used in coding languages

glissando A slide in pitch that moves up and down e.g. the strings, voice or trombone, marked by a line connecting the notes that start and end the glissando

idiophone An instrument that produces its sound when hit, shaken or scraped

imitation A device under the umbrella term of *counterpoint*, where different instruments, voices or parts copy the melodic / rhythmic material of each other

instrumental A piece of popular music that has no vocal accompaniment

interval The distance between two notes

inversion When a melodic phrase is turned upside down; part of the process called *motivic development*

korvai A rhythmic composition that connects different sections of Carnatic Indian music; often refers to different rhythmic varieties that can be performed

leitmotif A complete musical idea that can be 23 bars long or 8

level loop A loop in a game score such as one would find on the water world of *Super Mario*

lieder A German song for piano and voice that uses rhythm, melody and harmony to express the beauty of nature, sometimes the supernatural, and emotion

lock in A musician's term that describes the feeling of when the bass and drums lock in to each other rhythmically

loop Repetition of commands and functions for a set time period

Lydian mode A series of notes that pre-dates the Western major / minor system; using the white keys of the piano, it is found by playing F–F

melisma Singing more than one note to one syllable

membranophone Instrument with a vibrating skin or membrane

Mixolydian mode A series of notes that pre-dates the Western major / minor system; using the white keys of the piano, it is found by playing G–G

mode A type of scale that existed prior to the established major and minor scale system used today

motif A short melodic idea

motion Movement in music is described as parts moving in *parallel motion*, *contrary motion* or *oblique motion*

(motivic) development The process by which a musical motif or idea is transformed, while retaining some resemblance to its original form

movement One section of a whole work

musique concrète Recorded sounds from natural and electronic sources that are then transformed, layered and built into compositions not limited by musical rules

orchestrated Written out for different instruments / the way the instruments and sounds are layered, how they are to be performed and in which combinations

ostinato A continuously repeated pattern that can be rhythmic, melodic, played by the bass or played by any sound source in a work

ouroboros An ancient symbol depicting a serpent or dragon eating its own tail

palindrome A word or phrase reading the same forwards as it does backwards

parallel motion Two melodic lines moving in the same direction

passing notes Notes that join chord tones together, in effect passing between them

pedal The sustaining or holding of a tone to accompany e.g. a melody

Phrygian mode A series of notes that pre-dates the Western major / minor system; using the white keys of the piano, it is found by playing E–E

pitch Any note played; can also refer to the concept of *pitch*, which includes the elements of melody, harmony and bass

pitch material Any material that includes notes

plainsong Unaccompanied church music sung in unison with free rhythm corresponding to the text being expressed; it is the definition of *monophonic*, one sung line

programmatic music Music written or performed with an intended story or program

progression See *chord progression*

prolation Here refers to a mathematical concept where a rhythm is divided or multiplied by 2 and 3

prolation canon A series of voices set into canon but with their rhythms divided or multiplied by 2 and 3

quaver 8th note

recapitulation The return section in the musical structure known as *sonata form*

retrograde Playing a melody, rhythm or tone-row backwards; part of the process called *motivic development*

retrograde inversion When a series of notes are turned backwards and inverted; part of the process called *motivic development* or Schönberg's 12-tone row system

rhythm The concept that includes elements of time signatures, repetition, patterns, syncopation, variations and subdivisions

rhythmic material The patterns, notes and variations used to bring out the rhythmical combinations in a work, involving more than short and long notes, it looks at variation, subdivision and complimentary patterns

ritornello form A popular musical structure from the Renaissance and Baroque eras that relies on a returning theme (A) and is interspersed with variations each repeat, often marked by a solo section, e.g. A (tutti / everyone)-B (solo)-A (tutti)-C (solo)-A (tutti)-D (solo)-A (tutti)

round Repeating canon in which all voices are identical and repeat endlessly, never catching each other; often referred to as a *catch*

samba A style of Latin-American music with unique clave and instrumental patterns

scale A string of notes that ascends and descends in a particular pattern, from the Latin *scala* meaning 'ladder'

sequence The repetition of notes, or a phrase, at a higher or lower pitch

solfège / solfeggio A system of singing notes with attached symbols and sounds that outline their key and relationship to the home pitch (*doh*)

son clave A Cuban clave pattern that builds on the 2-3 or 3-2 pattern

sonata A classical era work made up of three main sections: exposition, development and recapitulation; often included a *coda* at the end (a 'tail' section) to round off the work

sting Short burst of sound that accompanies a hidden item or power-up in a game, often an element of sound-design and may not be musical at all

string quartet Group of four instruments organised as violin 1, violin 2, viola and violoncello

strophic form When a piece of music repeats the same music with different words (like a national anthem)

subdividing Dividing up a pulse into smaller groups of rhythms, or aligning them with dominant beats in a time signature

suite A collection of music, movements or dances common from the Baroque era to now

suitmation Stuntmen wearing a suit and interacting with specially designed sets to generate an animated form

symphonic poem An orchestral composition inspired by a literary or pictorial subject, e.g. a fable told to music

syncopation When accents are placed off of the main downbeat in a work

tab Short for tablature notation; a form of mapping that communicates to guitarists where to place their fingers to perform the required notes

tag A musical interlude or section that is triggered in a computer game score

tala A rhythmic cycle common to Indian music; can include multiple beats from 4, 7 or 16 cycles, each with its own accents and internal divisions

tetrachord Upper tetrachord or lower tetrachord are the top or bottom 4 notes of a scale: C-D-E-F or G-A-B-C

texture The layers of sound – foreground, middle ground and background – as well as how they change within a work; can be monophonic, homophonic, polyphonic or heterophonic

theme and variations The establishment of a clear theme that is followed by musical manipulations on the original using melodic, harmonic and rhythmic techniques

through-composition Adding layers with each repetition, without repetition of the previous section, e.g. A-B-C-D-E-F-G

time signature Notes per bar; the top number tells us how many beats there are in a bar and the bottom number tells us what type of beat is used

tone-colour How an instrument produces its sound / timbre, including all means of sound production including electronic manipulation

tone poem A fable told to music

tremolo Rapid bowing on a given note

triad See *chord*

velocity How hard or soft a note is played in computer music software; the computer then registers this on a scale of 1–127 to create e.g. accents

vocable A rhythmic sound that is percussive in itself, or expressed in a rhythmic way

vocal round See *round*

vocussion Vocal percussive sounds that can be performed

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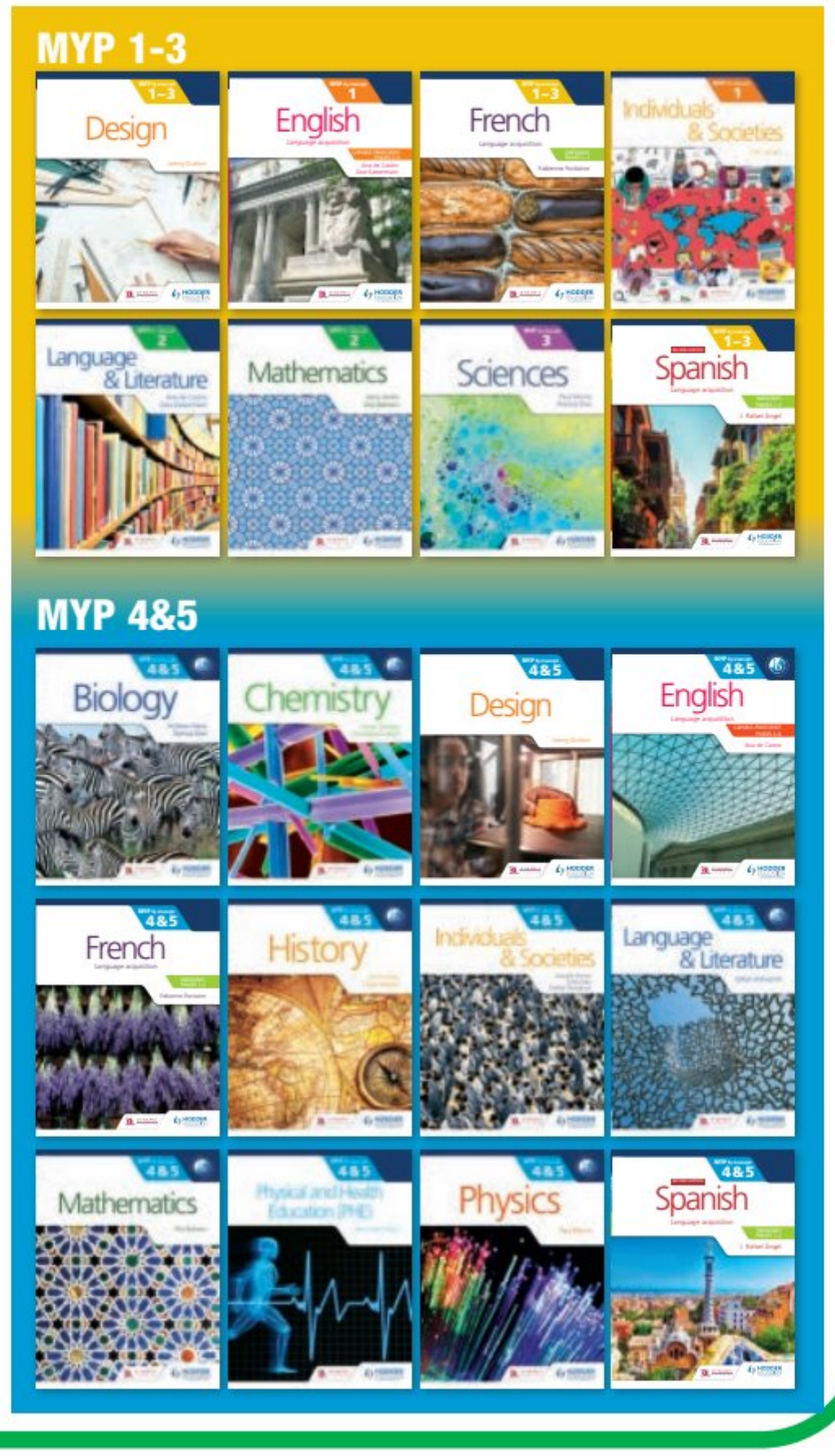
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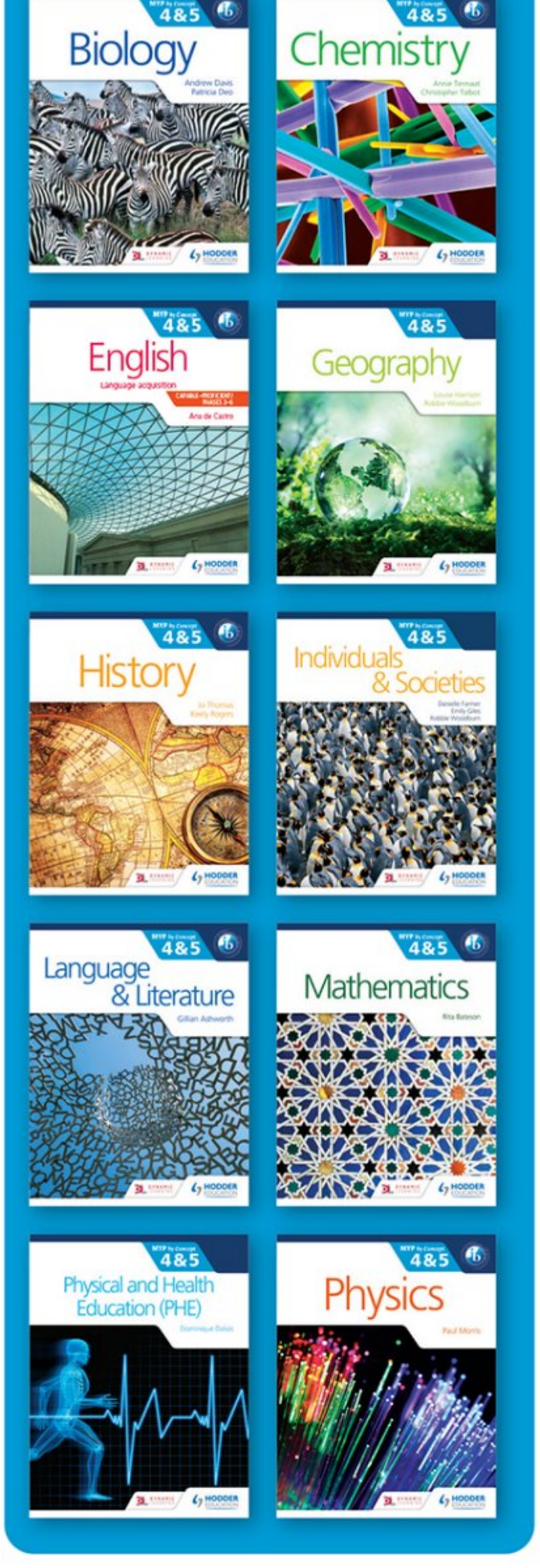
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